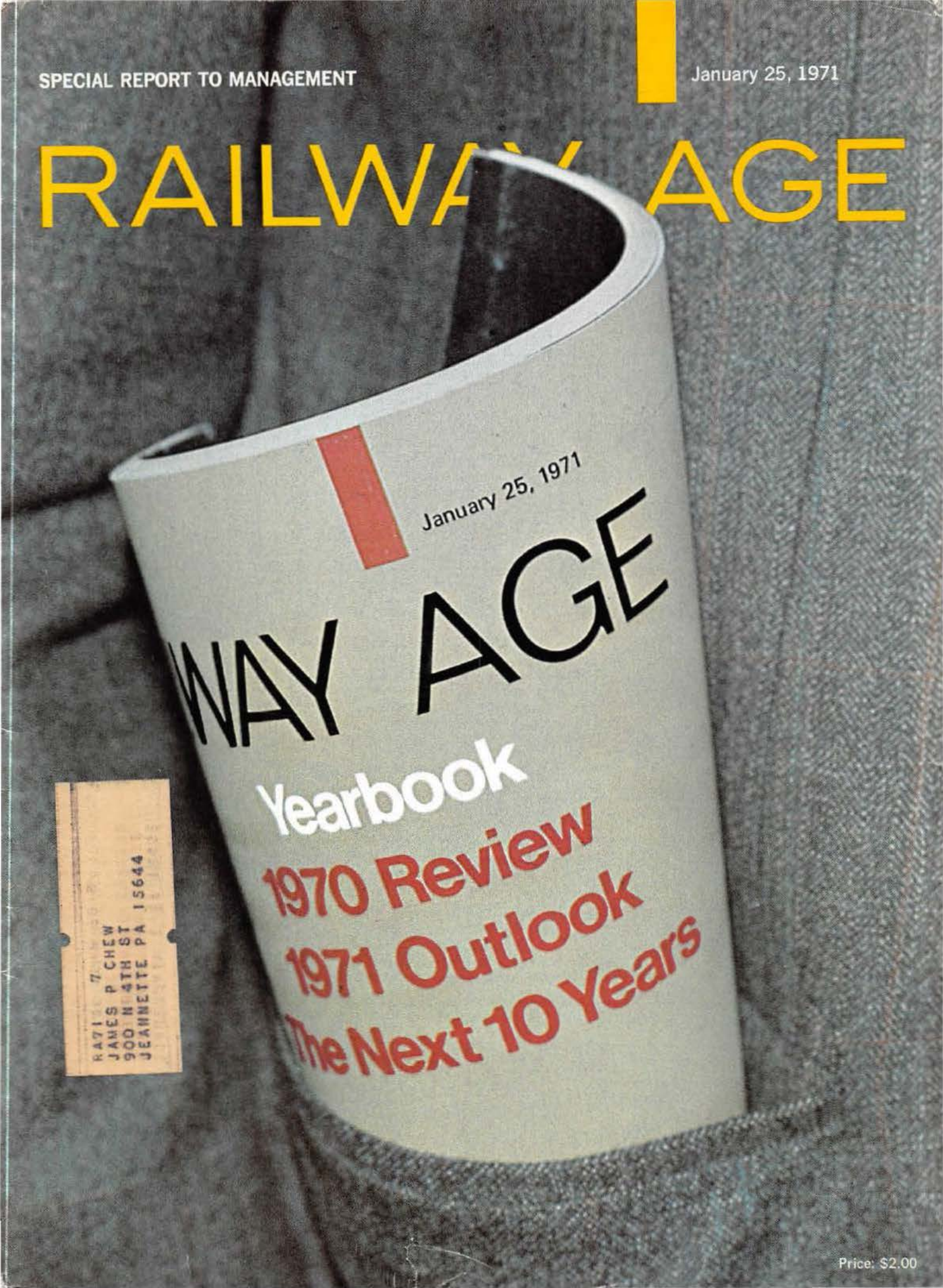
SPECIAL REPORT TO MANAGEMENT

January 25, 1971

RAILWAY AGE



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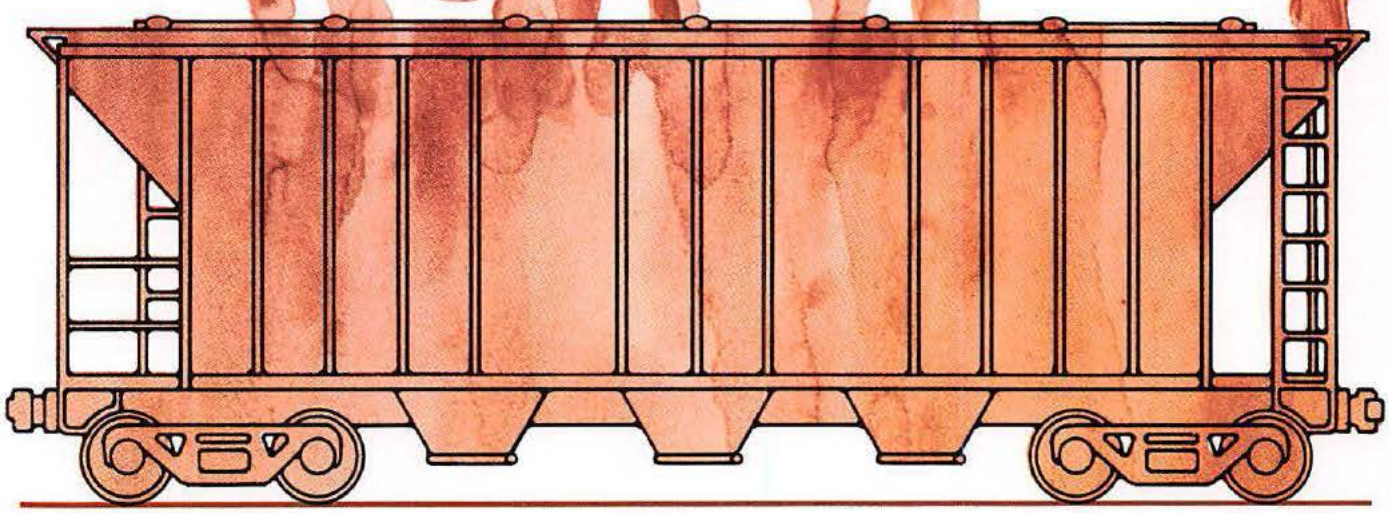
CORROSION CORRODES PROFITS



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ACID AND ALKALI RESISTANT VINYL FINISHES

The relentless corrosive attack on railroad rolling stock, whether from the material being transported or from external environmental influences, is of major concern to those seeking ways and means to lower maintenance costs and protect profits.

Carhide Acid and Alkali Resistant Vinyl Finishes extend the metal life of hopper and tank cars by providing a protective plastic film which is resistant to strong alkalies, inorganic acids, industrial atmospheres and fresh and salt water.

The superior adhesion and flexibility of *Carhide* Vinyl Coatings virtually eliminate cracking from metal expansion and contraction and give the finish superior impact resistance.

Primarily a protective exterior coating for covered hopper and tank cars, *Carhide* A & A Finishes are also applicable wherever resistance to chemical attack is required on other types of rolling vehicles and storage vessels.

To lengthen the life of freight cars, to reduce the cost of maintenance and to protect profits, coat your cars with *Carhide* A & A Vinyl Finishes—proven effective through the years. For additional information please mail the coupon below.

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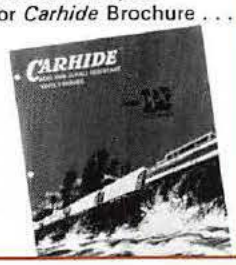

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☐ Other Railway Maintenance Finishes

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Company_____

Address_____

City_____ State_____ Zip_____

FLAT CAR OPTION-MAKERS

Trailer Train's Option-Maker executives, headed by President C. D. Buford, convene on a new Bethlehem-built flat car. Clockwise around the table: A. O. Taylor, E. F. Martin, S. Landy, R. H. Brodeur, and J. E. Wightman, Jr., VP & General Manager.

Can they save you shipping dollars?

Meet the team that runs Trailer Train, one of the most dynamic forces in railroading today.

They started with the flat car—plain, simple, little about it to grow obsolete—and established it as their common denominator of transportation equipment. As they built up the fleet to its present 60,000, they invested the cars with "options" so that each could serve a variety of loading uses.

Today, three standard car lengths offer shippers sixteen standardized types of cars, and the number is growing. The Option-Makers have open minds on broadening Trailer Train's usefulness. If you have a shipping problem, tell it to your *"TRAILER TRAIN"* railroad.

BETHLEHEM STEEL

BETHLEHEM STEEL

Bethlehem is one of Trailer Train's principal sources of cars as well as design and engineering assistance.

Guaranteed for 1,000,000 miles.

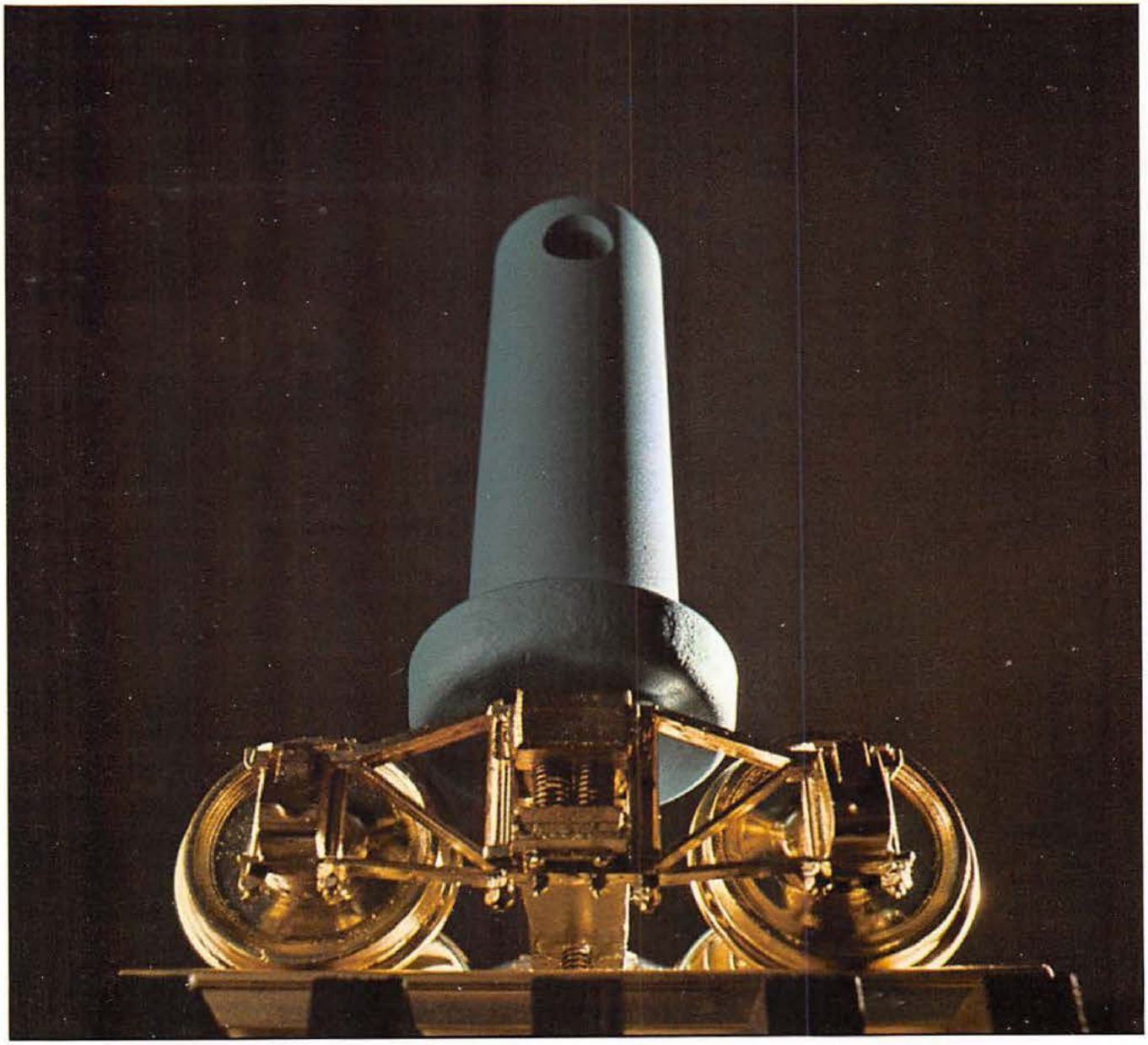
Ex-Cell-O "F" pins are the only freight car pins in the world with a million-mile guarantee.

Our "F" pins are the toughest you can buy.

Our pins are induction-hardened to a case depth of ⅛"—and restricted to the bearing area only. The 60 Rockwell case is supported by a rugged backbone of high carbon steel. Chamfered cotter holes and a stress relieved head insures that the pin will stay put. A final zinc plating operation resists corrosion and actually provides an excellent "break in" dry lubricant.

If a foreign line has to replace a pin for you, you'll pay a high price for labor and get a soft bolt replacement. That's why the smartest money goes into Ex-Cell-O "F" pins in the first place. They roll on for a million miles or more.

Track down all the information. Write Railway Products, Ex-Cell-O Corporation, Box 386, Detroit, Mich. 48232. We'll save you tons of pin money.



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EX-CELL-O CORPORATION

RAILWAY AGE

January 25, 1971 • Vol. 170 No. 2

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supporting
ASTRO

Inside

LUTHER MILLER

ONE GOOD COMPARISON . . .

Three billion, three hundred million dollars a year for 11 years—the amount ASTRO says railroads need to spend on self-improvement—is an awful lot of money, granted. But it is not so much, suggests Union Pacific Chairman Frank Barnett, when put into a broader context. In a note accompanying his reply to Railway Age's question on the ability of railroads to finance ASTRO-recommended improvements (p. 60), Mr. Barnett observed:

"It may be helpful to bring this annual figure into focus since it represents an approximation of the capital cost of bringing to 'John Q. Public' one of his most pressing necessities—low cost transportation—an item on which about 20% of our GNP is now spent. Let's make some comparisons:

"Expenditures on cosmetics in 1970 (est.) ....$3.7 billion.
"Retail sales of television sets
(1968 actual) .....3.8 billion.
"Wholesale sales of alcoholic beverages
(1968 actual) .....11.1 billion."

Can America afford to spend less for good transportation than it spends for lipstick? We think not.

. . . LEADS TO ANOTHER

We were so intrigued by Mr. Barnett's comparisons that we carried them a step further. How (we wondered) do the lipstick people sell so much lipstick; the television people so many tellies; the liquor people so much booze?

A question to Bob Paltos, Railway Age's research director, elicited the information that in 1969, cosmetics manufacturers spent $558 million advertising their products; the makers of alcoholic beverages, $296 million; the producers of TVs, radios and phonographs, $101 million.

Railroads, by contrast are spending around $20 million a year in all kinds of advertising and promotion (including the printing of timetables). And very little of this—less than $1 million at the current rate—is going to promote and "sell" the product that railroads need so desperately to put across: ASTRO.

Can railroads afford to spend on this great cause less than 1/500th of what is being spent to further the cause of cosmetics? We think not—and hope that the AAR will move quickly to restore some of the advertising/promotion funds that were lopped off last year.

A prime selling target for railroads is, of course, their own customers. Why not, for example, tie together the selling of service with selling the ASTRO idea?

Our own ASTRO ad campaign—directed at the 10,000 shippers who will receive this issue of Railway Age—begins with the message you will find on pp. 86-87.

New, new, new CLEAN, CLEAN CLEAN

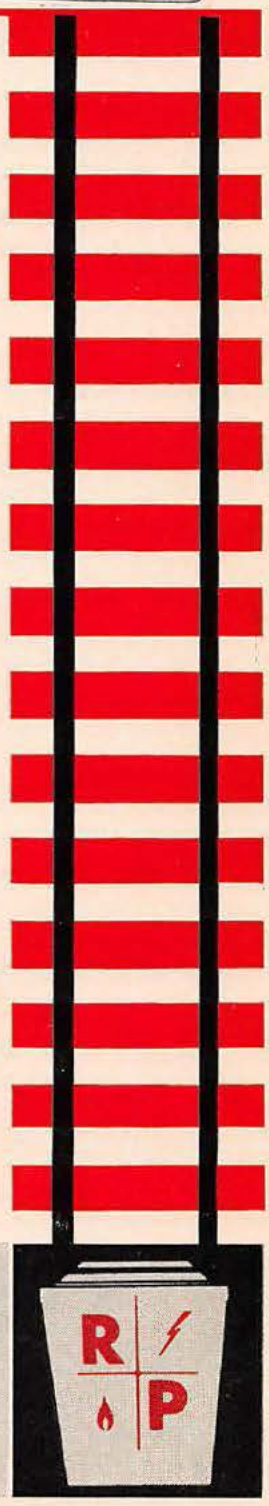
Model S is New, solves CLEAN issue for Right-of-way

MODEL S, Research Products' first, new waterless electric-incinerating toilet since 1964-65, came off the board for first deliveries in summer 1970. Obviously, Research Products has been selling to the railroads prior to such terminology, as ECOLOGY, RETENTION TOILETS.

But if we are to use today's terminology and slang, Research Products believes it should point out it has the largest number of retention toilets on locomotives—2,000 INCINOLET installations. That experience is worth a lot to you, as our new MODEL S comes out in 1971 to give railroads the STRONGEST, the MOST SIMPLE, MOST ECONOMICAL retention toilet for locomotives—and the CLEAN issue.

Check these six features on MODEL S

1. **COVER/LID** (all stainless steel) over top, toilet seat, and bowl to protect toilet from locomotive dirt, grime, and grease.
2. **SIMPLIFIED FLUSHING** with no moving parts and automatically initiated by closing cover/lid.
3. **ODOR CONTROL SECTION** enlarged sixty (60) percent and positioned differently around totally new incineration chamber configuration. To provide excellent odor control, disallow Air Pollution.
4. **VENTING BY EJECTOR PRINCIPLE** to avoid Backdraft from Diesel Motion. Important to optimum odor control.
5. **HEAVIER - GAUGE STAINLESS STEEL** throughout exterior and interior of Model S. For long life of unit and its components.
6. **HERMETICALLY-SEALED HEATERS** to seal out atmospheric moisture and to prevent occasional grounding from such moisture.



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Circle 5 on coupon page 91

RAILWAY AGE

JANUARY 25, 1971

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Short and Significant

RAILROADS

USSR PLANS ROLLING STOCK SHOW

The Chamber of Commerce of the USSR will sponsor an international railroad rolling-stock exposition in Moscow July 1-20. U.S. companies desiring to participate should get in touch with the Department of International Exhibits, USSR Chamber of Commerce, Sokolnicheski Valla, Moscow 232, USSR.

WABCO DISCONTINUES ACI PRODUCTION

The market for automatic car identification (ACI) equipment has proved to be "substantially lower" than anticipated—so Westinghouse Air Brake (WABCO) is dropping production of ACI systems and hardware. C. B. Ramsdell, vice president and general manager of WABCO's Signal & Communications Division, noted that a number of WABCO-produced systems are operational and others are in various stages of installation and check-out. "WABCO intends to honor our obligations to customers who now have our equipment," said Ramsdell. ACI equipment was sold under a license from Sylvania, which won system approval from the AAR. Original estimates were that as many as 4,000 ACI systems would be marketed. Recent surveys have brought this figure down to around 1,300.

LABOR WANTS MORE RAILPAX TRAINS

Rail labor—speaking through the Congress of Railway Unions and the Railway Labor Executives' Association—has told the Department of Transportation that it wants 80% of passenger trains now operating to be preserved when the National Railroad Passenger Corp. takes over intercity passenger-train service May 1. DOT's preliminary designation of Railpax routes calls for the preservation of only about 156 of the present 366 intercity trains, said the labor statement. Objecting to the "overriding and preferential importance" given to profitability in the preliminary DOT plan, the union statement added: "It is indeed ironic that the profit motive exercised under the very Act designed to save rail passenger service will immediately destroy two-thirds of it."

ELECTRIFICATION FOR CP?

Canadian Pacific is looking at the costs of electrifying its 650-mile line from Calgary, Alta., to Vancouver, B.C., according to S. M. Gossage, vice president of CP Rail. Projections show a virtual doubling of traffic over the route by 1980; CP feels that the state of electrification technology now justifies a careful study of this form of traction over its single-track mountain line. Also being studied is a 150-ton bulk-materials car with six-wheel trucks that would significantly increase the payload of unit trains over this route.

PAYROLL-DEDUCTION STOCK PURCHASE PLAN

Beginning Feb. 1, Southern employees may purchase stock in their company through payroll deductions, with the railway contributing an amount equal to 20% on behalf of each participating employee. Maximum permitted deduction is $100 per month per employee, or 6% of the employee's monthly compensation, whichever is less. Southern will pay brokerage commissions and other related costs. Southern President W. Graham Claytor, Jr., said the company initiated the plan at the request of a number of employees.

TRANSIT

MARYLAND NAMES DOT CHIEF

Maryland is the latest state to create its own Department of Transportation. The new department comes into existence July 1—but Gov. Marvin Mandel has already picked a DOT secretary. He is State Senator Henry R. Hughes, who now heads the Governor's Task Force on Transportation. The new department brings together all existing transportation agencies, including the State Roads Commission and the Maryland Port Authority. It will have primary responsibility for developing mass transit in Baltimore.

WASHINGTON METRO COSTS ESCALATE

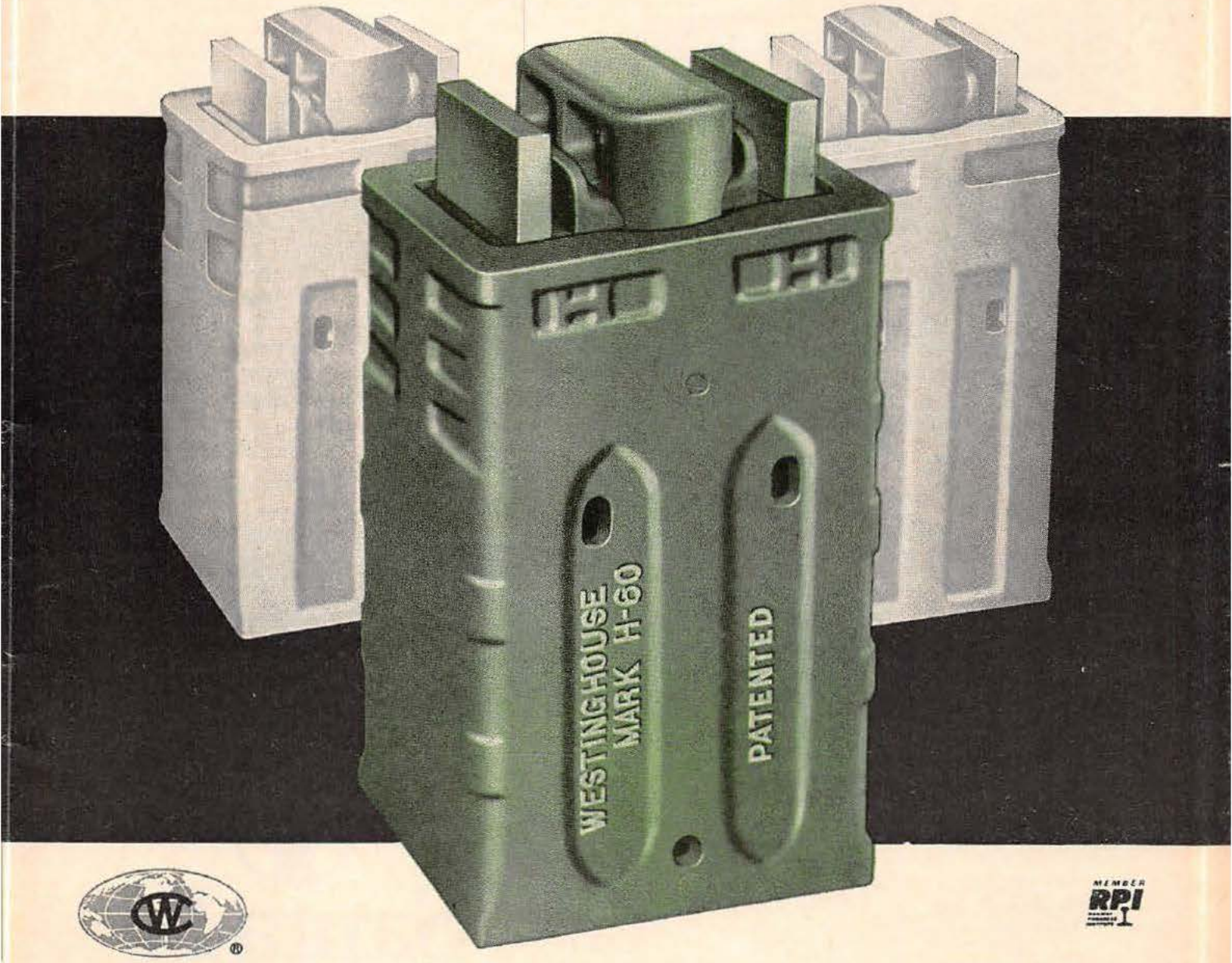
Total cost of Washington, D.C.'s 98-mile rail transit Metro system is now estimated at $2.98 billion—19% over the original estimate of $2.5 billion. Metro officials blame inflationary pressures, higher interest rates, appropriations delays, and inter-agency hangups for the increase. But Metro's board has reaffirmed its determination to proceed with construction of the rail system—"without sacrificing quality or service"— and to have the first segment operating by December 1973.

MARK H-60
THE 2-IN-1 GEAR

Six years ago—a challenge—How can one gear be made to do the work of two without an increase in size or travel? In two years, Cardwell Westinghouse Research and Development had the answer—the Mark H-60.

The H-60 has the equivalent energy absorbing capacity of *two* Mark 50 gears. This remarkable achievement in the science of draft gear engineering is accomplished by the addition of a hydraulic booster unit to the normal spring complement. The powerful hydraulic unit supplements the spring resistance to produce the multiplication of total draft gear capacity.

During the four-year period of varying service conditions, the H-60 established a dependable record along with its predecessors—the Mark 50 and Mark R-500. Applicable to all classes of cars with 24-5/8 inch pockets. *Meets A. A. R. Specification M-901G.* Tomorrow's draft gear is here today—Consider the H-60 as a must for cars 100-ton and over!



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Circle 6 on coupon page 91

People in the News

John P. Lynch
Thrall

D. A. Levenson
L. B. Foster

Murray J. Franklin
WABCO

G. W. Christiansen
Racine

Wm. N. Reinhardt
Racine

Wm. P. McIlrath
Racine

MISSOURI-KANSAS-TEXAS.—**M. Ritchey Cring,** vice president-public relations, retired Dec. 31 after 45 years of service. **Frank J. Heiling,** vice president-sales and services, has assumed responsibility for public relations and advertising.

Donald E. Lottes, assistant to vice president-sales and services, appointed administrative assistant, executive department.

In a reorganization of the administrative staff of the sales and services department, **Roy K. McDonald,** general sales manager, appointed assistant vice president-administrative, and **Ruby Hill,** secretary to vice president, becomes statistical supervisor.

Dr. Weldon D. Blassingame named medical director, Denison, Tex., to succeed **Dr. Roland S. Kieffer,** who retired Oct. 1, 1970.

PITTSBURGH & LAKE ERIE.—**Henry G. Allyn, Jr.,** named chairman and chief executive officer, Pittsburgh, Pa., succeeding **William H. Moore,** who resigned from the board Dec. 8. Mr. Moore, who is president and chief executive officer of **Penn Central,** took this action as a further step in his realignment of the management of the PC and its subsidiary lines. **Robert W. Carroll,** resigned as a P&LE director on Dec. 8 but will continue as secretary.

SEABOARD COAST LINE.—Has established a department of environmental engineering within the mechanical department to coordinate the company's anti-pollution programs. **William M. Harrison** heads the new department as chief of environmental engineering, Jacksonville. He was formerly chief of equipment maintenance.

TORONTO, HAMILTON & BUFFALO.—**Henry M. Babcock,** superintendent, Canada Division, **Penn Central,** St. Thomas, Ont., appointed general manager, TH&B, Hamilton, Ont., succeeding **Percy W. Hankinson,** who retired Jan. 1 as vice president and general manager of the TH&B, after a 53-year railroad career.

TRAFFIC EXECUTIVE ASSOCIATION—EASTERN RAILROADS— **C. L. Smith** appointed vice chairman, New York. Mr. Smith will continue as chairman, General Freight Traffic Committee—Eastern Railroads.

SUPPLY TRADE

John P. Lynch, assistant vice president, **Thrall Car Manufacturing Co.,** has been elected vice president.

D. A. Levenson has been appointed vice president and regional manager, Northeastern Region, **L. B. Foster Co.** The region is based in Pittsburgh and has division offices there and in New York.

Murray J. Franklin, vice president—operations staff, **WABCO,** Pittsburgh, has been elected vice president and general manager, **Westinghouse Air Brake Division,** Wilmerding, Pa., succeeding **William Ayres,** named vice president and group executive, Security and Technical Products Group, **American-Standard,** WABCO's parent Company, and executive vice president, Mosler Safe Co., Hamilton, Ohio.

The Racine Rail Division of **Racine Hydraulics** has been acquired from **Rex Chainbelt, Inc.,** by a group of former employees. **Racine Railroad Products, Inc.,** is the name adopted for the new concern. Principal operating personel are: **George W. Christiansen,** president and chief operating officer; **William N. Reinhardt,** vice president marketing; **William P. McIlrath,** vice president R&D and chief engineer; **Raymond C. Zukowski,** sales manager; **Howard Oldenburg,** service manager; **Donald Cook,** parts and customer service manager.

John B. Bohle has been appointed sales manager, industrial and competition products, **Hurst/Airheart Products, Inc.,** Sylmar, Calif.

INDUSTRIAL TRAFFIC

S. E. Mounes, vice president and general traffic manager, **Southwest Forest Industries,** Phoenix, Ariz., retired on Jan. 7. **Flake Willis,** executive vice president and general manager, **Apache Railway,** a wholly-owned subsidiary of Southwest, succeeds Mounes. **A. C. Hunt,** vice president and chief engineer, Apache Railway, succeeds Willis.

Gerould W. Hagar has been appointed assistant traffic manager, **Consolidation Coal Co.,** at Pittsburgh, Pa. He was formerly district sales manager, **Lehigh Valley,** Pittsburgh.

Russell A. Morin retired on Dec. 31 as director of transportation and distribution, **Fibreboard Corp.,** San Francisco.

The Traffic Department of **Bethlehem Steel Corp.,** has been redesignated the Transportation Department. **John C. Howard,** vice president in charge of traffic, continues as vice president, transportation. **Thomas T. Church,** general traffic manager, has been elected an assistant vice president, transportation. **William A. Rouse,** assistant general traffic manager, has been named manager, rail and truck transportation. The title of **Robert J. Jurgen,** assistant vice president, traffic, changed to assistant vice president, transportation.

The following changes were made in the Transportation & Distribution Department, **Boise Cascade Corp.,** effective Jan. 1: **Forrest B. Larsen** appointed manager—transportation cost & analysis, Boise, Idaho, succeeding **Charles G. Wise,** named manager—transportation commerce. **Fritz C. Delbrueck** joined the department in Portland Ore., as international traffic manager—timber, wood products and building materials; **Derry N. Nicholson** transferred from Boise to Portland as international traffic manager—paper.

OBITUARY

Guy L. Brown, 77, grand chief engineer emeritus, **Brotherhood of Locomotive Engineers,** died Jan. 1 in Des Moines, Iowa.

Charles F. Hammer, who retired in 1967 as vice president of engineering, **Westinghouse Air Brake Division, WABCO,** died Jan. 11 in Wilkinsburg, Pa.

Arnold Kable Henry, 72, emeritus professor of transportation, **University of Pennsylvania,** died Dec. 25, while visiting in Tionesta, Pa.

William J. Turner, 68, retired vice president-operations, **Atlantic Coast Line** (now Seaboard Coast Line), died Jan. 6 in a hospital in Ponte Vedra Beach, Fla.

MARK H-60

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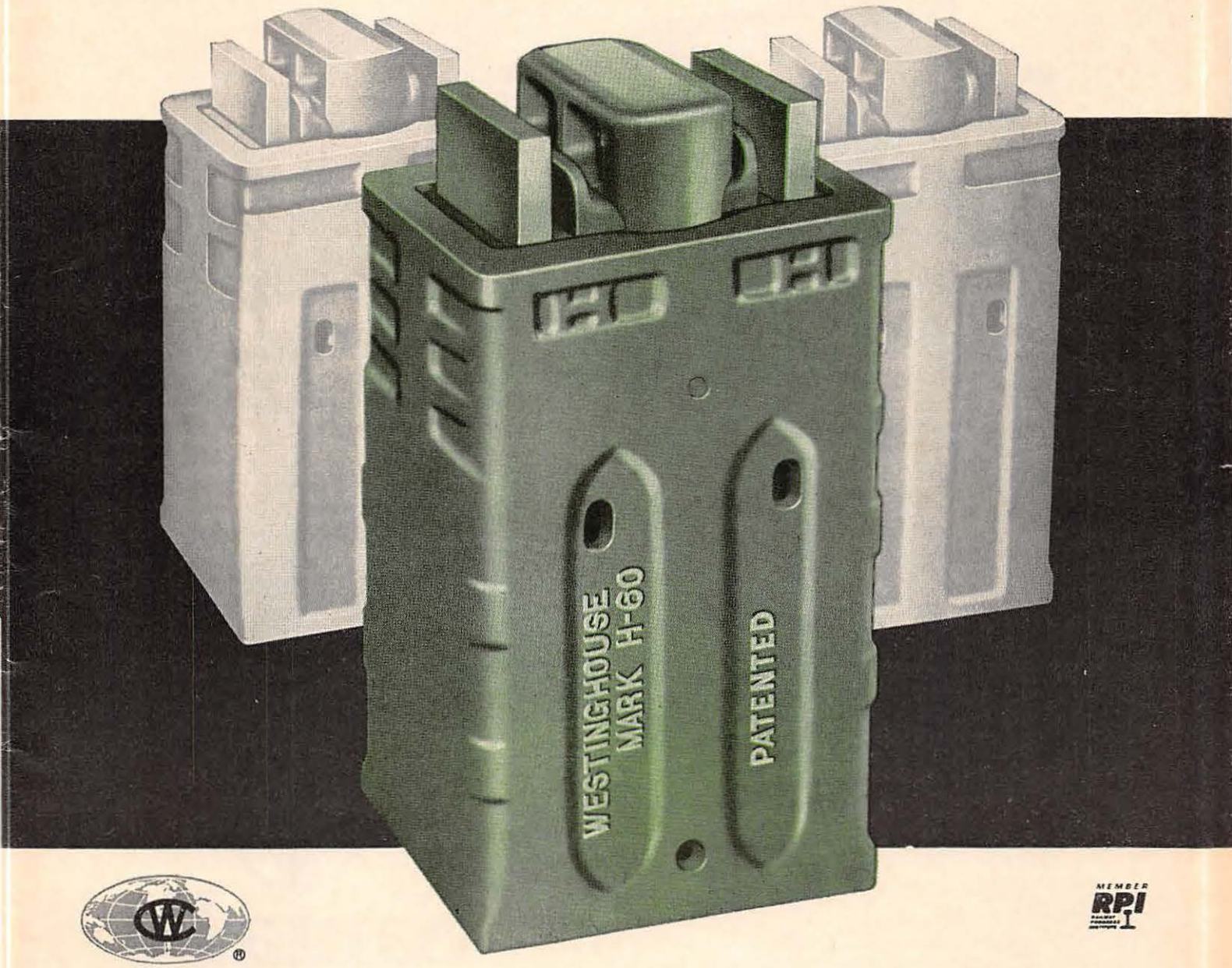

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Circle 6 on coupon page 91

Santa Fe - the world trade route

Bulk shipments by the carload and trainload have always moved to and from ports by rail, and still do. Today, though, containers are gaining in importance as an efficient method of moving many types of freight intermodally. For example a Japanese manufacturer loads the container and seals it. It moves by ship to the United States, overland by rail, and from the final terminal to destination by truck. What a simple, safe, satisfactory way to market.

Importers and exporters find Santa Fe the best way to ship by rail for several reasons. First, the busy California ports that Santa Fe serves have more sailings to and from Hawaii, Japan, Australia and the Far East than any other group of ports on the Pacific Coast.

Then Santa Fe has more freight schedules than any other rail carrier between Chicago, the Midwest, and these California ports to offer frequent connections with inbound and outbound ships.

When speed is a factor, "Super C", the world's fastest freight train, carries containers and Piggy-Back shipments between Chicago and Los Angeles in just 40 hours.

Similar advantages are available to shippers through the four Texas Gulf ports we serve as well.

Let our nearest freight or international sales representative show you how Santa Fe service can work to advantage on export-import traffic.

Every day goods in foreign trade arrive and depart from Santa Fe's Corwith Yard in Chicago.

Santa Fe serves these important California and Gulf Coast ports with fast, frequent freight service.

Santa Fe

Santa Fe

We helped build America.
Now we keep it moving.

Circle 7 on coupon page 91

RAILWAY AGE
NEWS

PC shippers find service is improving

When William H. Moore took over the presidency of Penn Central last Sept. 1, one of his first moves was to order all shippers' complaints brought to his personal attention. Last week, Moore was able to report that these complaints had dropped by 75%.

Said Moore: "I am very pleased that our efforts to increase the efficiency and reliability of Penn Central service have been rewarded with a steady month-by-month decline in reports of less than satisfactory performance. We are securing new business and have welcomed the return of former customers as a result."

Reports of delayed deliveries or other lapses in service, a Penn Central spokesman said, are forwarded promptly by the railroad's sales organization across the country to Edward G. Kreyling, vice president-sales and marketing. Kreyling develops corrective action to prevent recurrences and refers the reports to Moore.

Penn Central's quality control program, a function of the marketing department, is viewed as another important factor in stepping up service reliability and forestalling shipper complaints. This program is based on an analysis of computer reports of car movements throughout the railroad to check the progress of shipments moving to consignees, or to connecting railroads. Actual performance of freight trains is compared with published schedules.

Meanwhile, continuing studies of the flow of cars moving in and out of "keypoint" areas, also based on computer reports, monitor the efficiency of yard operations and interchange movements. Studies are also made of the movement of cars for particular shippers, and of the service performance of specific types of cars.

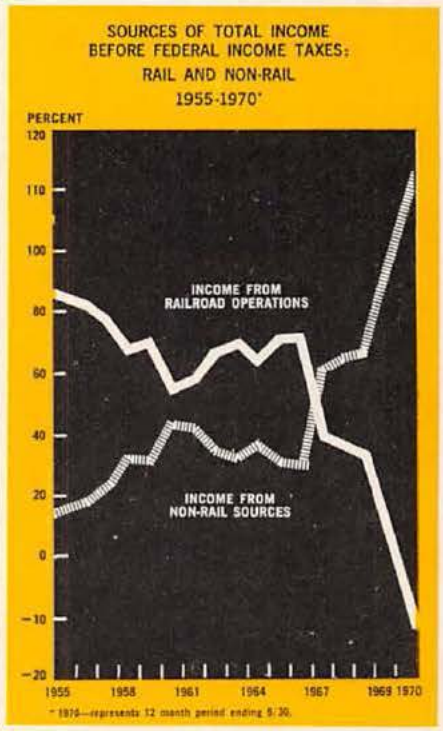
"We know that these new techniques are working," said Kreyling. "Consistency of on-time delivery of shipments has been rising week after week as we have been able to concentrate on reliability, which is the quality of service shippers want most."

Non-rail income keeps rails going

Without non-transportation income, the railroad industry as a whole would be operating in the red, former Senator George A. Smathers told Pittsburgh-area industrial and commercial leaders Jan. 11. Senator Smathers is general counsel of America's Sound Transportation Review Organization (ASTRO), which has recommended massive Federal aid to help the railroads implement a modernization program.

Smathers said that as of Sept. 30, 1970, "outside or non-transportation earnings accounted for 112% of total net income before taxes." Even including outside income, said Smathers, the railroad rate of return in 1970 was the lowest since the 1930s.

"The solvency and viability of the railroads is of vital importance—not because the railroads are in trouble, which they are, but because the nation will be in deeper trouble if the railroads are not able to measure up to the task that lies ahead," Smathers said. The meeting was hosted by executives of railroads serving the Pittsburgh area.



Auto-Train service due late in 1971

Late this year, the Auto-Train Corp. of Washington, D. C., in cooperation with the Seaboard Coast Line and the Richmond, Fredericksburg & Potomac, expects to be carrying motorists and their autos between Alexandria, Va., and Sanford, Fla., in "auto-trains" similar to those operated in Europe.

The Auto-Train Corp., which is headed by Eugene Kerik Garfield, filed a $7-million financing plan with the Interstate Commerce Commission Jan. 13. Garfield was joined in announcing the proposed service by W. Thomas Rice, chairman and chief executive officer of the SCL, and Stuart Shumate, president of the RF&P. Said Rice: "The operation planned by the Auto-Train Corp. is far more appealing than earlier concepts, and we feel that it will be the means of bringing a substantial volume of passengers back to rail service."

Trains and terminals will be owned by Auto-Train Corp., which has contracted with the rail carriers for operation and use of trackage between terminals.

While their private cars ride in enclosed auto-carriers, passengers will travel in double-deck coaches offering stereo music, closed-circuit TV movies, and food served at seats, including complimentary continental breakfast.

Reportedly, the flat one-way fare for the auto and all of its passengers will be $200. The train is designed, said Garfield, for families "who want the convenience of having their own automobiles arrive with them at their destination without all the hazards and delay of highway driving."

He added: "The decade of the 1970s should be the forerunner of sophisticated advances in rail passenger service and mass transportation. We want to make this bold and innovative concept a reality for the American traveler."

Maybe some people aren't trying to win a popularity contest But we are!

Our train schedules are geared to meet the requirements of your production line.

Whether carload or piggyback, your customers can count on our dependability to satisfy their needs.

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Try us and find out.

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BETHLEHEM, PA.
NEW YORK CITY

Circle 8 on coupon page 91

NEWS

N.Y., Conn. take over New Haven service

The states of New York and Connecticut early in 1971 assumed responsibility for operation of commuter service on Penn Central's New Haven division—and they paid the railroad $11 million in the process. PC President William H. Moore (left) received checks totaling $11 million as the takeover was effected. William J. Ronan (right), chairman of New York's Metropolitan Transportation Authority, signed a contract officially purchasing (1) the right of way from Woodlawn to Port Chester for $7 million and (2) 48 cars for $2 million. Frank M. Reinhold (center), chairman of the Connecticut Department of Transportation, executed a contract for $2 million for 49 cars. (Connecticut will lease the right of way in its state on an annual basis.) With the help of the U.S. Department of Transportation, the two states have already ordered 144 new cars, from General Electric, for operation on the line.

Atlanta will seek transit sales tax

Elected officials of the Atlanta area have agreed to ask Georgia's General Assembly for a local sales tax of ¾% to finance construction and help pay for operation of a rapid transit system. The tax would apply in the city of Atlanta and the counties of DeKalb, Clayton, Gwinnett and Fulton. It would produce about $30 million a year, of which about $20 million would be required for debt service on transit bonds. The remainder would pay most operating costs, with the result that only a low fare would be required. The agreement specifies that a fare of about 15 cents be charged throughout the system, regardless of the length of trip, and with full transfer privileges between trains and buses.

The agreement on a ¾% sales-tax proposal was reached after a discussion of various proposals, including income taxes, special tax districts, and ad valorem taxes.

Atlanta Mayor Sam Massell proposed a 1% sales tax which would provide sufficient funds so that no fare need be charged. The Georgia Constitution specifies, however, that the Metropolitan Atlanta Transportation Authority is authorized to develop "a system for the transportation of passengers for hire."

Dow acts to boost car utilization

Dow Chemical is instituting a new (and uniform) policy on car-detention time—with the goals of cutting transportation costs and improving service through better car utilization. This new policy, which went in Jan. 15, applies to all customers using Dow-leased equipment. It will provide up to seven days free detention time on tank cars, up to 30 days on liquid chlorine cars and up to 14 days on hopper cars. Beyond these set periods, Dow will charge $10 per day, per car. In a related move, the company says that an existing minimum-order size on liquid chemicals (the greater weight of 4,000 gallons or 40,000 pounds) will continue to qualify for bulk price.

TurboTrain test extended by DOT

The U.S. Department of Transportation has signed a $3.8-million contract with United Aircraft Corp. calling for the production of four additional TurboTrain cars and modifications to the cars currently in service between Boston and New York. This is part of DOT's decision to extend the TurboTrain experiment by at least two years.

In a statement announcing the extension, DOT Secretary John A. Volpe said, "As the President pointed out last fall, Turbo service has come to be accepted, used and counted on by travelers in the Northeast Corridor. I am happy to state that we have come to an agreement with United Aircraft Corp., builders and owners of the Turbos, not only to continue this service but to improve it."

The first improvement, Volpe said, will come Feb. 1 when the TurboTrains will start running into New York City's Pennsylvania Station rather than Grand Central Terminal. This means that the Boston-New York TurboTrains and the New York-Washington Metroliners, another DOT high-speed experiment, will have a direct linkup for the first time. TurboTrains will now leave South Station, Boston, at 7:25 a.m., arriving Pennsylvania Station, New York, at 11:13 a.m., connecting with the Metroliner leaving New York at 11:30 a.m. and arriving Washington at 2:29 p.m. Northbound, the TurboTrain will leave Penn Station at 4:15 p.m. and arrive South Station at 8:04 p.m., having connected with the Metroliner leaving Washington at 1 p.m. and arriving New York 3:59 p.m.

DOT said its new contract with United Aircraft includes provision for "an extensive modification program to increase comfort and reliability which will temporarily reduce operating schedules from seven to five days a week starting Jan. 22."

Under the contract, DOT's Federal Railroad Administration will lease the existing two three-car trains from UAC until 1973. The builder will also perform certain maintenance tasks. Penn Central will continue to operate the trains under a separate monthly contract.

Watching Washington

REID BEDDOW

SPELLBINDING, SENATE STYLE

By tradition, Congress meets on the first Tuesday after Jan. 1. In neither 1970 nor 1971 has this happened, because of the previous session running late. Thus it was that on Dec. 30, Congress was still at it, busily churning out last-minute laws, including a $125-million guarantee for trustee certificates of bankrupt railroads. In the Senate, for almost two hours, the lawmakers discussed railroads before passing the bill 47-29. Transportation reporters were held spellbound as the Senators wrestled with rail problems, hoping for some insight into 1971 voting patterns.

A SENATORIAL COLLOQUY—AND A VOTE

As a sample of the thinking rail lobbyists have to contend with this year, consider the following colloquy between Senators William Fulbright (D.-Ark.) and Marlow Cook (R.-Ky):

Mr. Cook: "Mr. President, I would like to make two points. In the first paragraph of the Act creating the Interstate Commerce Commission, it gives the ICC the authority to regulate and establish and maintain a viable transportation system throughout the United States. . . .

"I notice that the distinguished Senator from Alaska is seated behind the Senator from Arkansas. The Federal Government owns the Alaska Railroad. It has owned it ever since it was created. It owns every piece of equipment. It owns the railbed. We have been paying a subsidy to the Alaska Railroad in the Interior bill every year since the Senator from Arkansas has been here. I might suggest to the Senator that the ICC regulates the Alaska Railroad. It allows rate increases. The ICC has regulated the Alaska Railroad so that it has never made a profit in a single year since it has been in existence, and it has been running since about 1920."

Mr. Fulbright: "I wish to ask the Senator this question. Why not abolish the ICC and set up something that will work?"

Mr. Cook: "I would refer the Senator to the unanimous opinion of the Committee on Commerce the other day when this bill was changed to state it would be the Secretary of Transportation and not the ICC [guaranteeing trustee certificates]. It was agreed that if a bill came before the Senate to abolish the ICC it would pass unanimously."

Mr. Fulbright: "Why not put it in as an amendment on this bill? That would bring it to a head."

Mr. Cook: "Then we really would be here until noon on January 3."

Mr. Fulbright: "Not if we passed it unanimously."

How did the two Senators vote? Against the loan guarantee bill—in the minority.

NEWS

The ACI Scanner

I hope you saw our presentation in this space last issue. Once a month I'll be bringing you up to date on our doings and developments in ACI generally.

ACI Systems Corp. is a very young company in terms of corporate life, but its people represent a solid background of experience in automatic car identification and transportation control systems. For example, David Collins, who is Chairman of our Executive Committee and President of Computer Identics Corp., one of our parent companies, has spent eleven years in ACI development. He led the group which produced the first successful ACI system, the one which was adopted as standard by the AAR in 1967.

Palmer Bayer is our Chairman and is also President of Intermodal Transportation Systems, Inc., our other parent. While he is best known for his major role in the development of piggyback, he was an early supporter of ACI and participated in the first trailer identification demonstrations.

My own background includes twenty-six years of railroad operations on two railroads, most recently as Vice President—Operations. From 1965 to 1969, I had the privilege of serving as the first Chairman of the AAR ad hoc Committee on ACI.

Our prime objective is to serve the railroads in ACI and transportation control. We believe we have the tools and the people to accomplish that objective.

W. H. Thompson
President

ACI SYSTEMS CORP

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Phone: (312) 427-0236

Circle 9 on coupon page 91

Pressure-in-transit car protects resins

An airtight Center Flow covered hopper with special adjustable pneumatic outlets is pressurized with inert nitrogen gas to protect plastic resins during transit. Pressurization after loading prevents air and moisture from reaching the resins, eliminating the need for shipment in sealed bags and making possible bulk handling. Already 45 of the pressure-in-transit cars have been delivered to Goodyear Tire & Rubber Co. from ACF's Amcar division plant at Huntington, W. Va.

Henry A. Correa, ACF president, emphasizes that the new car makes it possible to move powdered or pelletized resins—raw materials for a variety of consumer products—more economically than previously. The Goodyear cars represent the first full production order, according to Correa. He anticipates interest in this type of car because of a growing need for quality control in the growing plastics industry. "Plastics is growing tremendously," he explains. "In 1969 a total of 9 million tons of plastics were produced by U.S. companies, a tripling of production since 1960." In eight years since its introduction, more than 26,000 Center Flows have been put into service.

AMSTED chief cites railroad problems

AMSTED Chairman Joseph B. Lanterman had a non-rail audience—the Automobile, Machinery and Metals group of the Investment Analysts' Society of Chicago—but he still had quite a bit to say about the future of the railroads, including the observation that unless railroads are healthy, "our economy will not be healthy." Railroads, he added "will be a permanent and necessary part of our nation's transportation system for decades to come, but many railway companies are presently facing a financial crisis which requires government help." AMSTED's chairman also called attention to ASTRO—and he cited estimates indicating that (1) by 1980, railroads will be handling one-third more traffic than today; and (2) to keep pace with this demand, an average of 75,000 new freight cars will be needed each year.

"The weak will pull down the strong"

Why cannot strong railroads support their weaker neighbors? It's a question often asked by those who know that all carriers are not in a Penn Central position. Owen Clarke, vice president of the affiliated Chesapeake & Ohio/Baltimore & Ohio, provided an answer for the Charleston, W. Va., Rotary Club in a Jan. 15 address:

"Stronger railroads are just not capable of balancing the negative impact of our less-fortunate sisters," said Clarke.

"Since fully half of all rail traffic is routed over two or more railroads, 'survival' of the fittest cannot apply. Service failures or lack of adequate equipment on one link of a rail movement cannot be erased by even the highest standards of service on the remainder of the route. In an interdependent industry such as ours, the law of the jungle is totally reversed. Inevitably, sooner or later the strongest are hauled down to the level of the weakest."

The answer, said Clarke, is implementation of ASTRO. Without ASTRO, he said, "our days are numbered."

On passengers, CP's Crump is bearish

What is the future of the passenger train on the Canadian Pacific? CP Chairman N. R. Crump made these comments in a recent television interview:

"In the near future, I don't think too much change will take place. In the long-term future, it's quite a different matter. As I see it, the effective demand for rail passenger service has really disappeared, and we're going to have to tailor our transportation facilities to suit the needs of the public.

"In the near future, the principal purpose of rail passenger transportation will be in the commuter business, because of the urban sprawl that's taking place . . . Ultimately, freeways will jam up and I think that the rail passenger business has some future in this direction, although I don't think it can ever be profitable. It will be merely a service.

"As to passenger service over greater distances, I think the service between Montreal and Toronto will continue to grow and expand—350 miles seems to be about the right distance for a train service. Otherwise, I must say I can't see very much future in the rail passenger business."

BN moving ahead on Pasco Yard project

With the opening of new hump facilities, Burlington Northern has completed Phase 1 of a $4.7-million modernization program at its Pasco, Wash., classification yard. Also included in the first phase were additions to receiving-yard capacity and a regrading of the yard bowl to improve car-rollability. Coming up next will be installation of a weigh-in-motion scale, and new signal installations.

The Pasco project is one of four major yard improvements involving BN. Already completed is a new yard at North Kansas City; and it's now expected that construction will begin in 1971 on new yards at Minneapolis and Spokane.

Lines on Labor

GUS WELTY

LIFE AMONG THE POLITICOS

There are, Tom DeButts observes, "three fundamental truths about labor relations. First, in most collective-bargaining situations, there is no bargaining. Second, collective bargaining is an irrational process. Third, labor unions are political organisms and labor leaders are political purists." DeButts, Burlington Northern's vice president-labor relations, was arguing the case for a "labor court" to determine settlements when the parties themselves can't agree. He was calling for "judicious reasoning" to take the place of irrationality. He wasn't quarreling with the motivations of labor leaders. But he was, in fact, recognizing those motivations for what they mean: "There is only one solution," he said. "When negotiations are unsuccessful, final responsibility must be removed from the hands of the professional union politician. We must take these people off the hook."

POLITICAL SAVVY: IT'S THE NAME OF THE GAME

Strong evidence indicates that there is, in fact, just one Charles Luna. But a compilation of the recent comments of United Transportation Union's president does tend to cast a bit of doubt on this singleness—as it also backs up what Tom DeButts is saying. Take, for instance, Luna's view of the Congressional action which gave labor its wage increases and failed to give management its needed rules reform: Railroad people, he declared, should "stand up and demand that we be treated like first-class citizens." The laws, the courts and the government, he charged, are "all stacked against allowing members of railroad unions to use the weapons that other labor unions are free to use." Or, take the UTU president's comment regarding a tradeoff of pay increases for rules changes: "A classic example of giving with one hand and taking away with the other." Or, take his most recent public pronouncement—to the effect that the union will push for nationalization of the railroads if its current wage dispute isn't settled by March 1. Then, however, consider the Luna who appeared before the Senate Commerce Committee as a Railpax incorporator-nominee: This was a Luna who was quoted as saying that if Railpax is to succeed, rail labor "is going to have to recognize that there will have to be some give-and-take" on work rules.

There they are: Luna the militant, Luna the politician, Luna the statesman. And perhaps it's an unfair comment: But what a difference a different audience and a different set of circumstances seem to make. Of course, no union leader gets to be a leader without political acumen which a run-for-office public politician might envy. And no union leader maintains control without the exercise of that political savvy. Unfortunately, what is true isn't necessarily right. And as Tom DeButts says, it's time to get 'em off the hook.

People in the News

John P. Lynch
Thrall

D. A. Levenson
L. B. Foster

Murray J. Franklin
WABCO

G. W. Christiansen
Racine

Wm. N. Reinhardt
Racine

Wm. P. McIlrath
Racine

MISSOURI-KANSAS-TEXAS.—**M. Ritchey Cring,** vice president-public relations, retired Dec. 31 after 45 years of service. **Frank J. Heiling,** vice president-sales and services, has assumed responsibility for public relations and advertising.

Donald E. Lottes, assistant to vice president-sales and services, appointed administrative assistant, executive department.

In a reorganization of the administrative staff of the sales and services department, **Roy K. McDonald,** general sales manager, appointed assistant vice president-administrative, and **Ruby Hill,** secretary to vice president, becomes statistical supervisor.

Dr. Weldon D. Blassingame named medical director, Denison, Tex., to succeed **Dr. Roland S. Kieffer,** who retired Oct. 1, 1970.

PITTSBURGH & LAKE ERIE.—**Henry G. Allyn, Jr.,** named chairman and chief executive officer, Pittsburgh, Pa., succeeding **William H. Moore,** who resigned from the board Dec. 8. Mr. Moore, who is president and chief executive officer of **Penn Central,** took this action as a further step in his realignment of the management of the PC and its subsidiary lines. **Robert W. Carroll,** resigned as a P&LE director on Dec. 8 but will continue as secretary.

SEABOARD COAST LINE.—Has established a department of environmental engineering within the mechanical department to coordinate the company's anti-pollution programs. **William M. Harrison** heads the new department as chief of environmental engineering, Jacksonville. He was formerly chief of equipment maintenance.

TORONTO, HAMILTON & BUFFALO.—**Henry M. Babcock,** superintendent, Canada Division, **Penn Central,** St. Thomas, Ont., appointed general manager, TH&B, Hamilton, Ont., succeeding **Percy W. Hankinson,** who retired Jan. 1 as vice president and general manager of the TH&B, after a 53-year railroad career.

TRAFFIC EXECUTIVE ASSOCIATION—EASTERN RAILROADS— **C. L. Smith** appointed vice chairman, New York. Mr. Smith will continue as chairman, General Freight Traffic Committee—Eastern Railroads.

SUPPLY TRADE

John P. Lynch, assistant vice president, **Thrall Car Manufacturing Co.,** has been elected vice president.

D. A. Levenson has been appointed vice president and regional manager, Northeastern Region, **L. B. Foster Co.** The region is based in Pittsburgh and has division offices there and in New York.

Murray J. Franklin, vice president—operations staff, **WABCO,** Pittsburgh, has been elected vice president and general manager, **Westinghouse Air Brake Division,** Wilmerding, Pa., succeeding **William Ayres,** named vice president and group executive, Security and Technical Products Group, **American-Standard,** WABCO's parent Company, and executive vice president, Mosler Safe Co., Hamilton, Ohio.

The Racine Rail Division of **Racine Hydraulics** has been acquired from **Rex Chainbelt, Inc.,** by a group of former employees. **Racine Railroad Products, Inc.,** is the name adopted for the new concern. Principal operating personel are: **George W. Christiansen,** president and chief operating officer; **William N. Reinhardt,** vice president marketing; **William P. McIlrath,** vice president R&D and chief engineer; **Raymond C. Zukowski,** sales manager; **Howard Oldenburg,** service manager; **Donald Cook,** parts and customer service manager.

John B. Bohle has been appointed sales manager, industrial and competition products, **Hurst/Airheart Products, Inc.,** Sylmar, Calif.

INDUSTRIAL TRAFFIC

S. E. Mounes, vice president and general traffic manager, **Southwest Forest Industries,** Phoenix, Ariz., retired on Jan. 7. **Flake Willis,** executive vice president and general manager, **Apache Railway,** a wholly-owned subsidiary of Southwest, succeeds Mounes. **A. C. Hunt,** vice president and chief engineer, Apache Railway, succeeds Willis.

Gerould W. Hagar has been appointed assistant traffic manager, **Consolidation Coal Co.,** at Pittsburgh, Pa. He was formerly district sales manager, **Lehigh Valley,** Pittsburgh.

Russell A. Morin retired on Dec. 31 as director of transportation and distribution, **Fibreboard Corp.,** San Francisco.

The Traffic Department of **Bethlehem Steel Corp.,** has been redesignated the Transportation Department. **John C. Howard,** vice president in charge of traffic, continues as vice president, transportation. **Thomas T. Church,** general traffic manager, has been elected an assistant vice president, transportation. **William A. Rouse,** assistant general traffic manager, has been named manager, rail and truck transportation. The title of **Robert J. Jurgen,** assistant vice president, traffic, changed to assistant vice president, transportation.

The following changes were made in the Transportation & Distribution Department, **Boise Cascade Corp.,** effective Jan. 1: **Forrest B. Larsen** appointed manager—transportation cost & analysis, Boise, Idaho, succeeding **Charles G. Wise,** named manager—transportation commerce. **Fritz C. Delbrueck** joined the department in Portland Ore., as international traffic manager—timber, wood products and building materials; **Derry N. Nicholson** transferred from Boise to Portland as international traffic manager—paper.

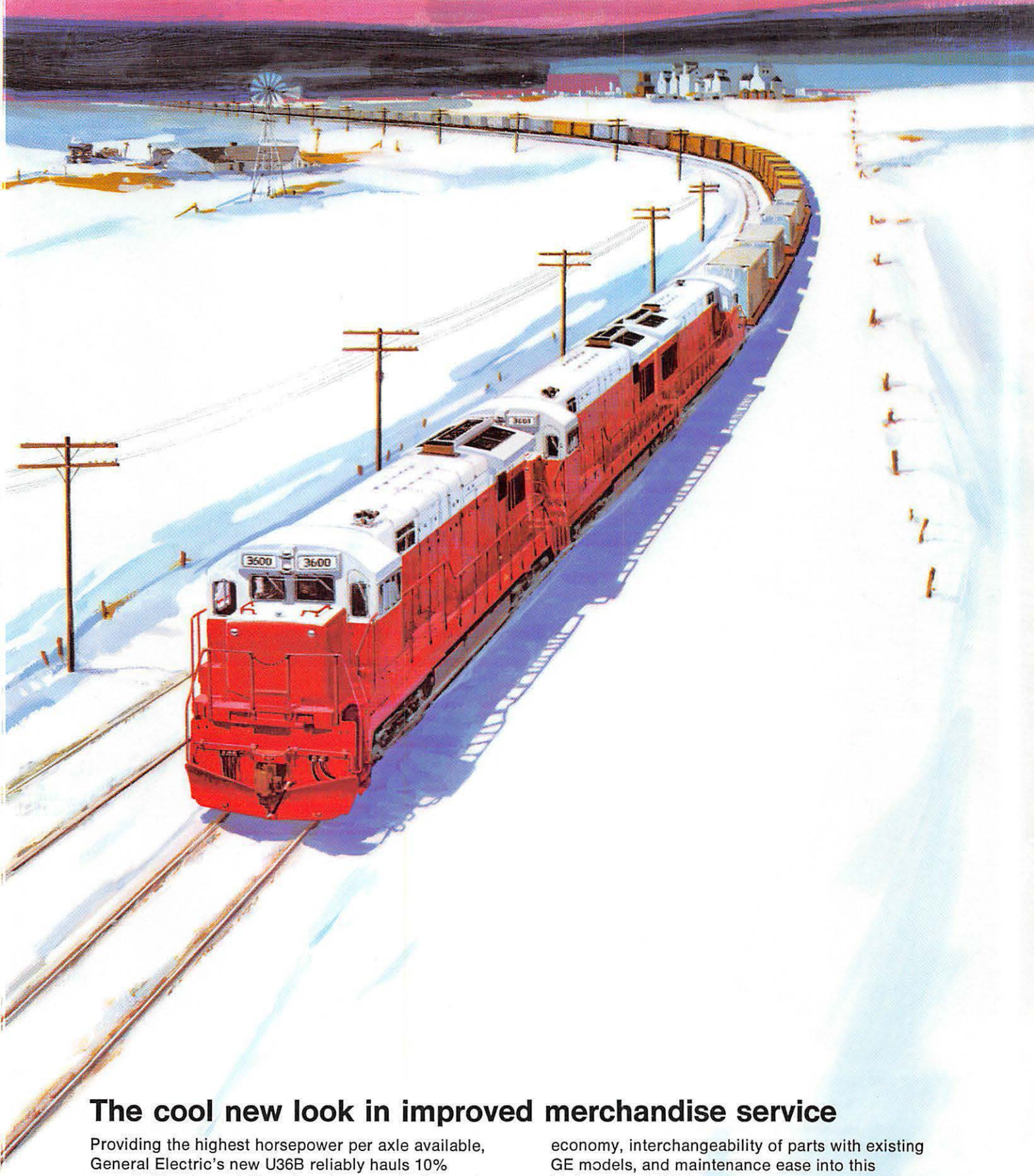
OBITUARY

Guy L. Brown, 77, grand chief engineer emeritus, **Brotherhood of Locomotive Engineers,** died Jan. 1 in Des Moines, Iowa.

Charles F. Hammer, who retired in 1967 as vice president of engineering, **Westinghouse Air Brake Division, WABCO,** died Jan. 11 in Wilkinsburg, Pa.

Arnold Kable Henry, 72, emeritus professor of transportation, **University of Pennsylvania,** died Dec. 25, while visiting in Tionesta, Pa.

William J. Turner, 68, retired vice president-operations, **Atlantic Coast Line** (now Seaboard Coast Line), died Jan. 6 in a hospital in Ponte Vedra Beach, Fla.



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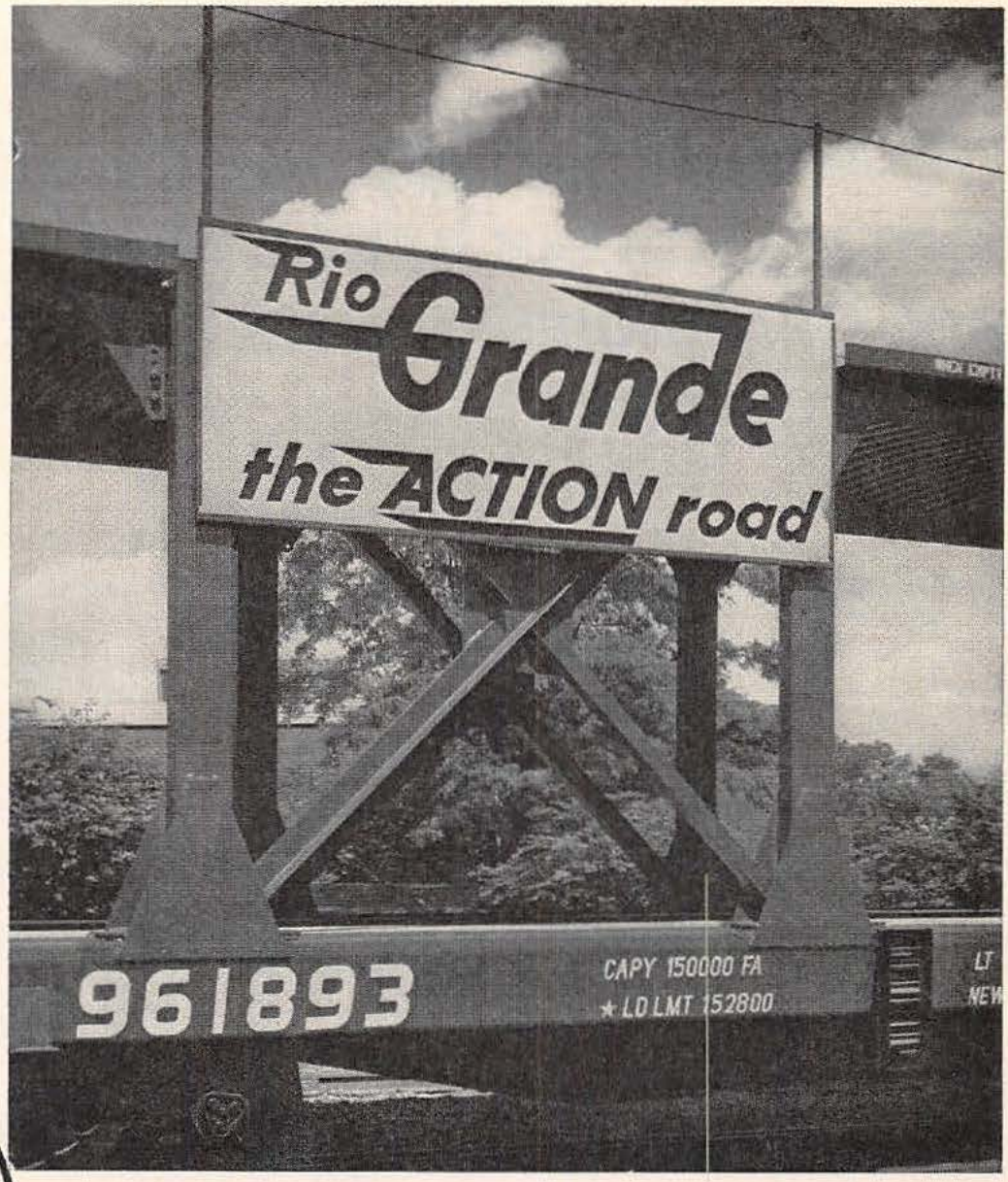

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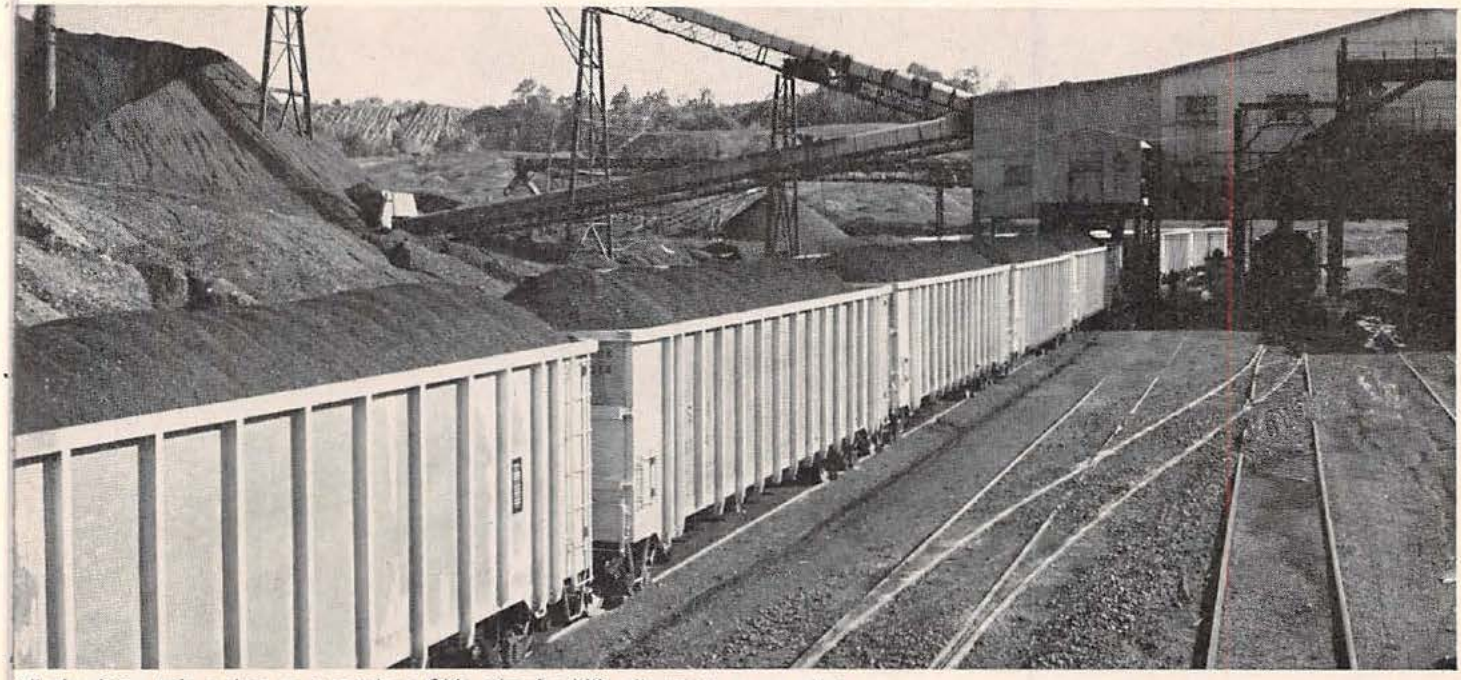
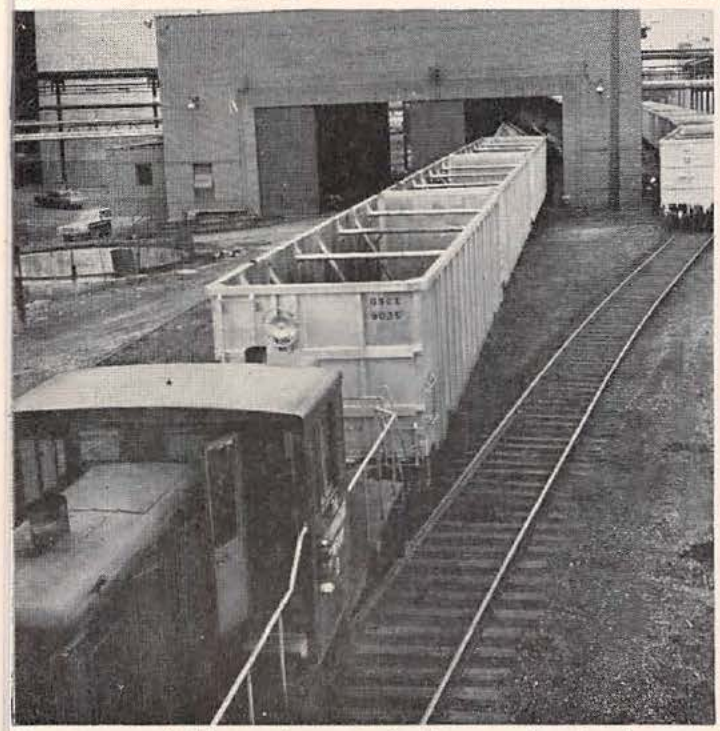
Circle 12 on coupon page 91

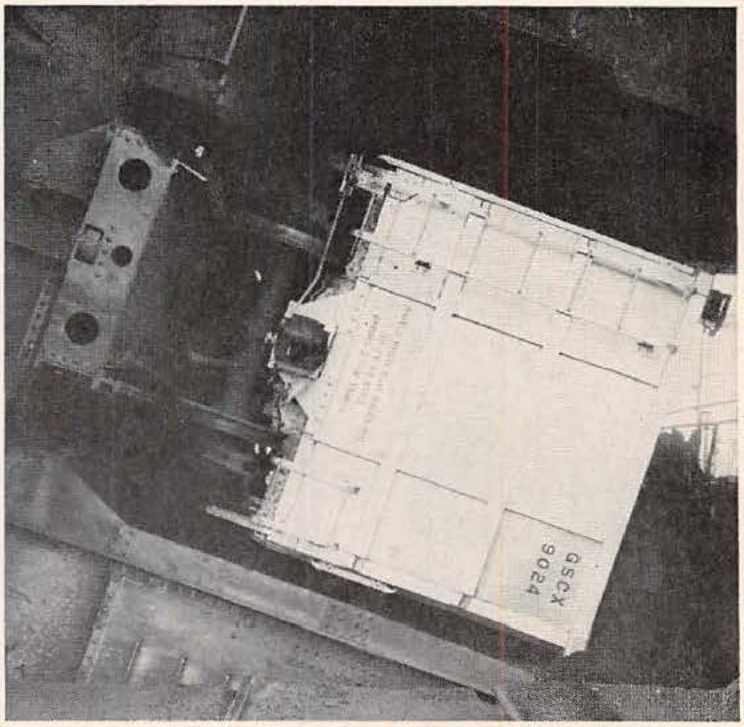
ALL-ALUMINUM TRAIN PART OF UTILITY'S PLAN TO CUT COAL COSTS 50¢ PER TON



All-aluminum train makes-up at southern Ohio mine for 100-mile run to power plant.



Remote-controlled locomotive spots aluminum cars in rotary dumper.



Cars are uncoupled prior to dumping. A scanner will record car weight, car number, load weight and provide copies for utility, railroad and coal producer.

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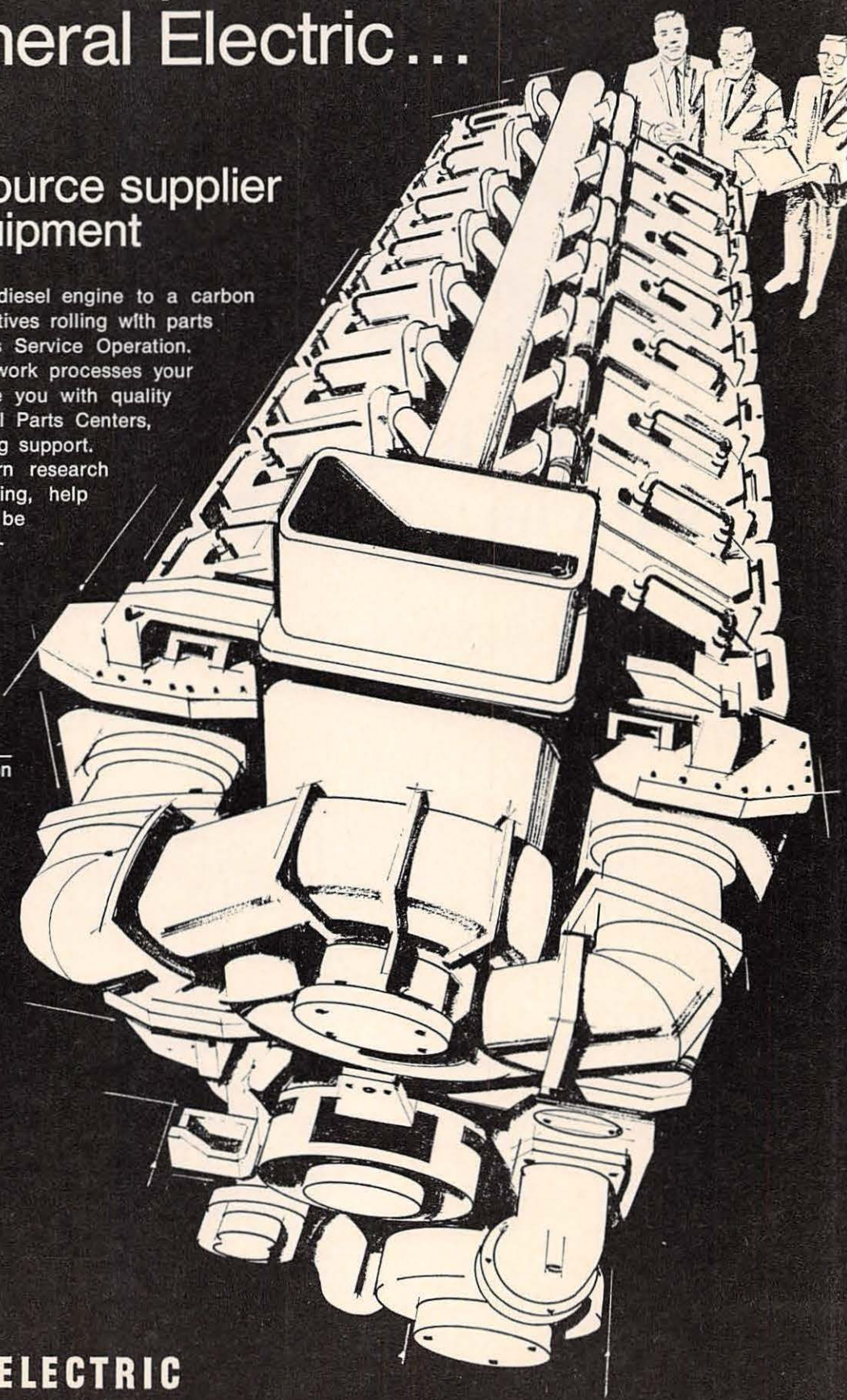
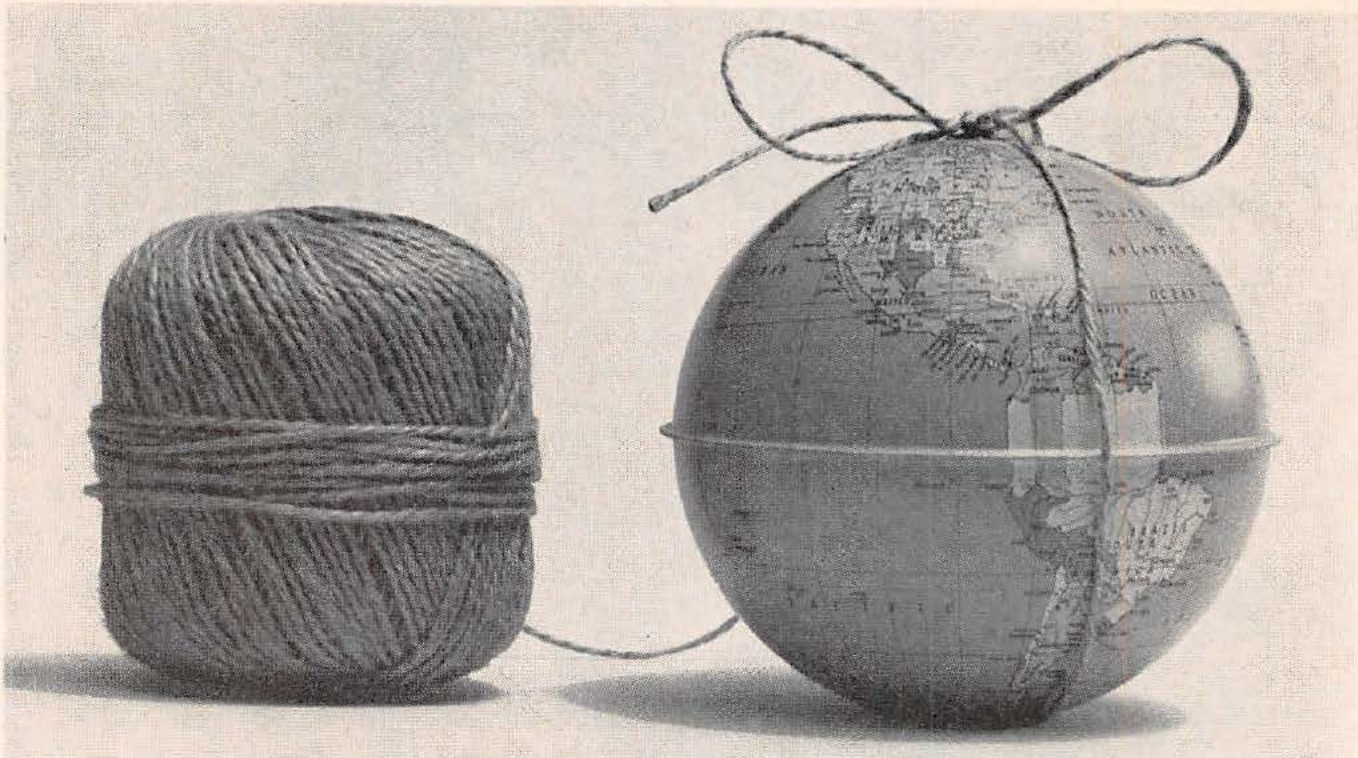
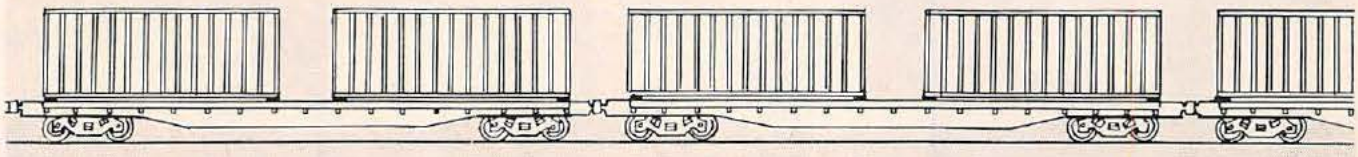


TRANSPORTATION PARTS SERVICE OPERATION

GENERAL ELECTRIC



string along with us... & we'll give you the world.



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Circle 16 on coupon page 91

Last call – just time to make it!

Get aboard the big AREA Meeting Special with the industry's top reporters

These four and other top Railway Age and Railway Track and Structures editors will be serving up the news for the annual American Railway Engineering Assoc. meeting at the Sherman House, Chicago, March 15, 16, and 17. There will be AREA meeting features, reports on the use of mechanized methods and equipment in maintenance of way and structures, a round-up of new engineering products and equipment. Both magazines will have extra distribution at the meeting. And this year the reports on roadway will have special importance. . .

With the spotlight on roadway, the time is right

The new Federal Railroad Safety Act of 1970 is the first comprehensive rail safety law of this century. It puts great new emphasis on track maintenance.

AAR's new "Recommended Standards for Track Maintenance". For the first time, the association's member roads have been handed a set of specific standards.

The new ASTRO recommendations on right-of-way maintenance include: 1) Creation of a Federal Transportation Fund; 2) Establishment of a loan-guarantee program; 3) Allowing roads to amortize cost of grading and tunnel bores; 4) Restoration of rapid tax amortization; 5) Inclusion of railroads among those elegible for Federal assistance following a natural disaster.

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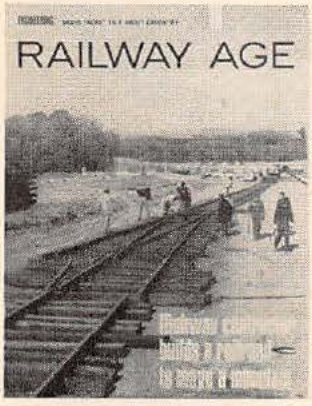

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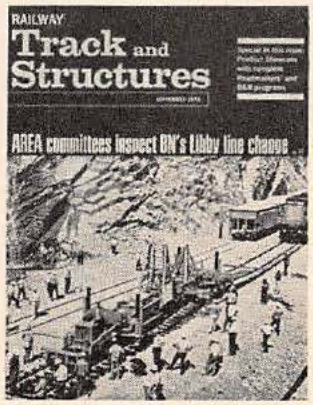

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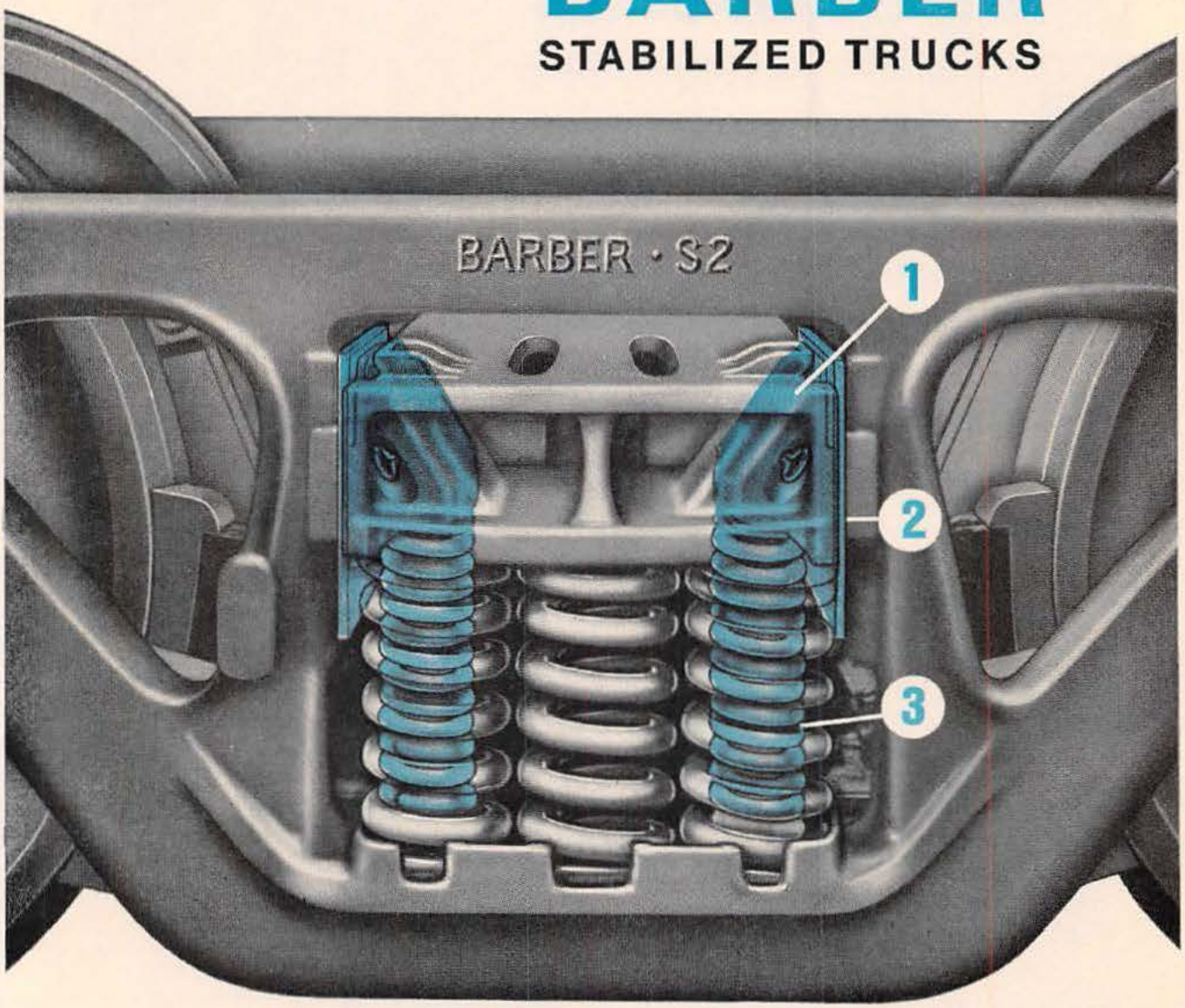

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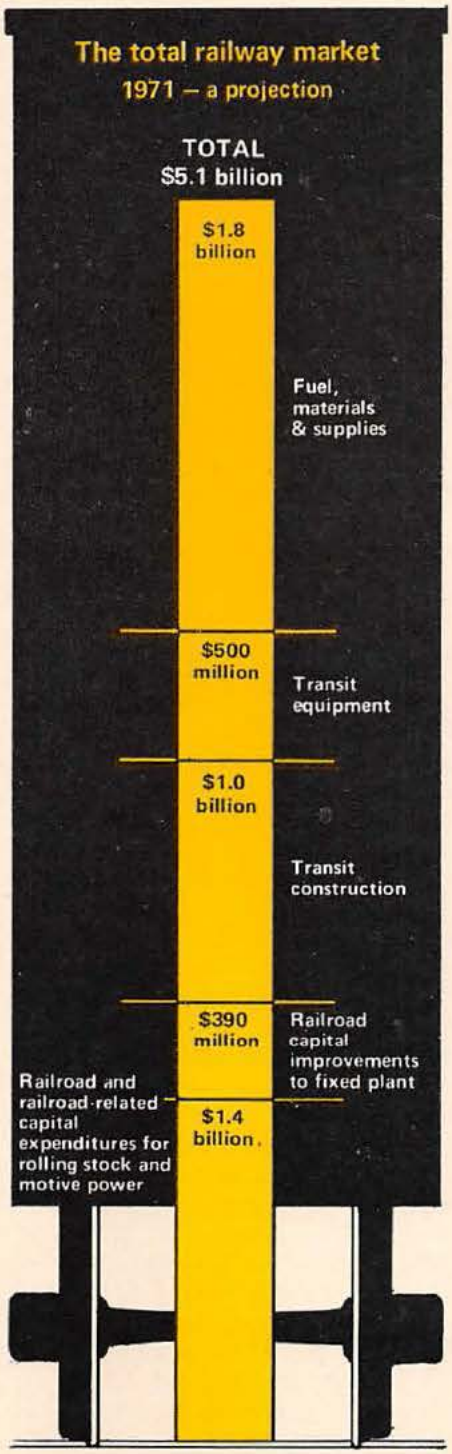
OUTLOOK

For 1971: A $5-billion rail market



Some might look at the railroad industry in 1971 and call it moribund. They would be wrong. The facts are that (1) there is perhaps more positive activity around the old industry than there has been in a number of years, and (2) there is every hope that this activity, coupled with well-aimed help from the outside, can bring a marked improvement in the railroad situation.

Without any doubt, 1970 was the most peculiar year the industry has experienced in a long time. Many factors combined to create a volatile situation, one in which projections are risky. But a few things do seem fairly clear in looking at 1971 and beyond:

—Operating revenues this year should be up substantially. Revenue gains in '70 were almost solely the product of rate increases, since carloadings and ton-miles showed a decline. But in 1971, revenue totals should reflect both the rate increases and a traffic improvement. Economists tend to believe that recovery from the 1969-70 business slump will be gradual. But there are certain areas of the economy where more direct and specific movement can be forecast. There are strong indications, for instance, of a sharp pickup in housing. General Motors will be playing catch-up, after the late-1970 strike, but even beyond that somewhat artificial improvement factor, the industry generally seems to be looking for a banner year in sales. Movement of traffic involved with the basic steel industry will probably be heavier than usual, as users stockpile in an attempt to hedge against the possibility of labor trouble in Big Steel later in the year.

—Operating expenses in '71 will also climb. Though business was down in 1970, fuel, material and other supply costs were up, and that cost trend can be expected to continue. The big expense item, however, will be labor cost. Total payroll last year took a giant step upward, even though total railroad employment again declined. And there is nothing on the scene at this moment to indicate any lessening of the pressure on the industry from the brotherhoods for stiff increases in wages and benefits. At the same time, there is only a hope that the industry can win meaningful work-rules reform to partially offset higher wage/benefit costs.

—Total railroad capital expenditures will probably decline somewhat, but that's by no means certain. AAR figures peg capital spending for 1970 at $1.34 billion. U.S. Department of Commerce/Securities and Exchange Commission estimates, compiled on a somewhat broader basis, put the 1970 total at $1.83 billion. The Commerce/SEC projection for 1971 sees expenditures at $1.56 billion, a drop of 14.7% from 1970 levels. The bulk of railroad expenditures are for freight cars and locomotives, and it's difficult to reconcile over-all spending-decline forecasts with certain other indicators in the rolling stock area. Orders for new freight cars, for example, added up to about 48,000 units in '70. A Railway Age survey points to an order level of about 65,000 cars this year; a major carbuilder, ACF, puts its estimate not far away, at 60,000 units. On the locomotive side, EMD, for one, remains most optimistic for 1971 and beyond, based on projected increases in rail freight traffic and on the continuing need for replacement power. And there is a reasonable possibility that railroad spending for fixed-plant improvement may rebound. Expenditures in this area dropped to about $360 million last year, after peaking at $421 million in 1969. The $360-million total was the lowest since 1965.

—Consideration of the improvement picture must also include rolling stock added to the fleet through railroad leasing and by private owners

and lessors. Additions in both of these categories have been on the upswing. When purchases of fuel, materials and supplies are thrown in, and rail-transit capital budgets are included, it all adds up to a $5-billion market for rail and rail-related suppliers.

Shrinking income, low rate of return continue to be major industry headaches.

—Availability of money will be, as usual, the tough nut. Penn Central's mid-1970 failure was a severe blow to the industry's standing in the money markets. But there are some indications that the fallout from the PC affair is lessening. And the cost of money has been declining slowly, reflecting revised governmental approaches to continuing economic problems. Still, the industry as a whole has to cope with the problems arising out of (1) net railway operating income of less than a half-billion dollars and net ordinary income of half what it was in 1969, (2) a rate-of-return which sagged to 1.76%, and (3) a deficit working-capital position.

—Government will be more active than ever (or at least since 1958) in probing into industry problems and, hopefully, in helping to do something about them. What government will be able to accomplish, however, very much remains to be seen. Government has before it the recommendations of the ASTRO report, and the backup data supporting those recommendations. It would seem logical that (1) if government regards railroads as vital and essential when a strike situation develops, then (2) government should exhibit the same concerns in dealing with the immediate and long-range problems raised by ASTRO. Looking at the situation coldly, however, it would be reasonable to expect that a few proposals already considered by Congress may have the best chance for quick action. This priority category would include tax-discrimination legislation and legislation aimed at improving car supply through creation of a national freight car company, or provision of loan guarantees, or both.

Despite labor crises, hopes for ASTRO ride high . . .

—An Administration push for new labor law covering railroads could have both good and bad effects. The scope of the railroad problem generally was made clear in the series of labor problems which plagued the industry and the nation last year. As 1971 dawned, very little in the labor area had been resolved. The new Congress was, or should have been, well aware of the wide gulf between labor's demands and the industry's capacity for meeting them. At the same time, (1) if specific labor disputes are again forced into Congress, and (2) if the Administration does place a top-priority tag on labor-law revision, other equally vital proposals could be delayed for a time.

—Support, in Congress and outside, will build up for the kind of legislative reform envisioned in ASTRO. During late-'70, railroads began taking their story to the public. At that point, there was little specific legislation on which they could ask support. Reports indicate, however, that the railroad story has been received sympathetically, and that public understanding of the industry's essentiality and of its problems may finally be starting to develop. Public support, of course, will be vital to ASTRO. Again looking at the situation coldly, though, equally important may be (1) the backing of 570,000 rail employees and their organizations, and (2) the non-opposition of other forms of transportation.

. . . but railroads must show that they are capable of internal improvement.

Adding it all up, you come to one conclusion; This is the year that will point the way for the '70s; hopefully, it will point the railroads and the transportation industry as a whole in the direction of improved capability—because every projection indicates that the nation will founder if transportation is unable to keep pace with the sharply increased demands that will be placed upon it.

As the problems and the proposed solutions get consideration, however, railroads will be under pressure to demonstrate that they are indeed working up to the limit of their ability to generate improvement from within. This won't be an easy thing to demonstrate—but the goal is certainly worth the effort, despite the complications involved.

One big plus: Penn Central is shaping up.

One of those complications, of course, is the critical situation facing Penn Central. Despite court protection and despite government approval of loan-guarantee legislation, its future is by no means assured. But, under new leadership, PC is starting to behave like a merged company which wants to make merger work. Its service is improving, as both customers and connecting railroads are noting.

There is also a broad aspect of the PC failure that deserves consideration. PC has, in a real sense, brought the industry together. For years, railroad men have talked of the interdependence of railroads. But for those same years, railroads have had a reputation as a feuding, fighting industry. Partly, this was earned. Partly, it reflected the nature of things, because inter-railroad disputes—mergers, rates, divisions, per diem and the like—are fought out in a public forum.

At last, railroads seem to have achieved a genuine unity of purpose.

Of course, there will always be legitimate differences of opinion between railroads—just as there are legitimate differences of opinion between steel companies and oil companies and so forth. But railroads do now seem to be making a sincere attempt to settle those differences.

In addition, individual roads are putting new effort into self-help projects. Under the circumstances, the industry can take some pride in what it has been able to do in the area of capital improvements, and what it has planned for 1971. With ASTRO pegging capital requirements at roughly $3 billion a year and railroads now spending barely half of that, there's a lot of room for improvement. But there's a lot of room between what ought to be done and what can be done, and the industry will need ASTRO-oriented help in closing that gap.

More to the point now, perhaps, are service-improvements already under way or in the works. Without much doubt, the industry as a whole has been slow to go full-blast into such things as run-through trains, expanded pre-blocking practices, use of dedicated equipment in fast-turnaround unit-train service, use of quality-control performance measurements and establishment of service-quality standards. Critics are correct in arguing that some of these things should have been done long ago. But the past is irretrievable, and the point is that these operational improvements are being made. And more are coming.

Service is better, though still not good enough.

Coming, too, is a new assessment of what railroads ought to be handling, and how, and at what price. In the past, far too much business returned no profit—but the job of the traffic solicitor was to get every available carload for his railroad. This is changing, hopefully not too late. And it shows up in various ways: TOFC/COFC loadings declined for the first time in 1970—and, while nobody can say for sure which factors accounted for how much of the decline, it seems certain that a part of the "loss" involved business which was being handled for the sake of having business and not in the interest of profitability.

In addition, investment decisions are being made more carefully—with better backup information and with proper, if belated, concern for return-on-investment.

Over-all, though, what happens in transportation and what happens to transportation in 1971 depend upon more factors than anybody can accurately assess now—the economy generally, the attitudes of the new Congress, the thinking of the Administration, labor problems inside and outside the industry, the availability of investment money and its cost.

All transport is in trouble. But railroads, the keystone, require first aid.

One sobering thought is that none of transportation is really in good shape. Major airlines are in deep trouble, with the industry as an entity showing a loss. Motor carriers are not all that well off.

Railroads, however, remain the key to transportation capability, to transportation capacity. If their problems are allowed to persist—and, inevitably, worsen—glowing economic forecasts for the rest of the century will make little sense.

Nationalization (of railroads or of any other form of transportation) would be a foolhardy course of action, creating more problems than it could ever solve. Within the framework of private ownership and management, the situation can be improved—with keen perception on management's part of what it can do, and with understanding on the outside of the problem-factors which are beyond management's power to correct.

For the nation—and for railroads, specifically—1970 fell far short of living up to the bright prospects which the '70s were supposed to hold. Not everything that's wrong can possibly be made right in 1971. But the whole process of righting wrongs has to start someplace and sometime. Railroads, for the most part, have started the process working. Government now has its opportunity to participate—actually, its obligation to participate. And the time for all of this to really get rolling is 1971.

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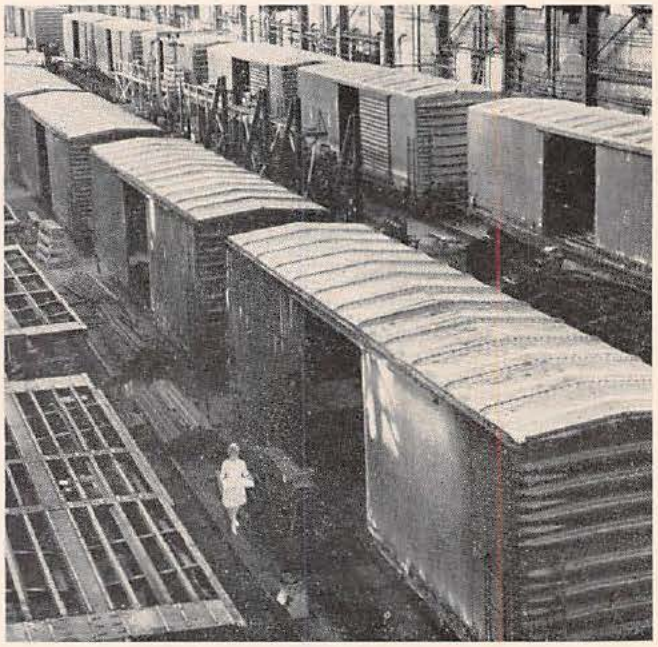
Here at Berwick's Catastrophe Ward, tired, old freight cars tell some pretty gruesome stories. Endless crushing jolts on couplers and draft gear; countless miles over some pretty rough track at break-neck speeds; constant exposure to the worst kind of weather. In fact, our doctors are amazed that some of these oldtimers are able to limp in here at all.



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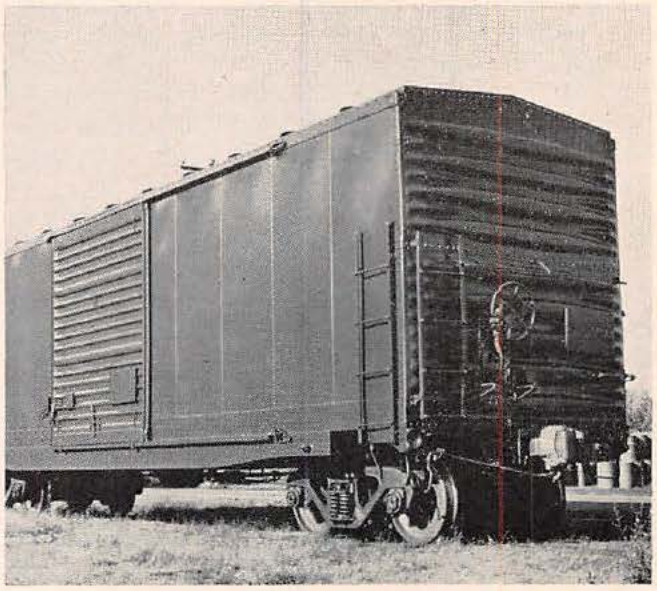

If only the gang down at Atlanta Junction could see me now.

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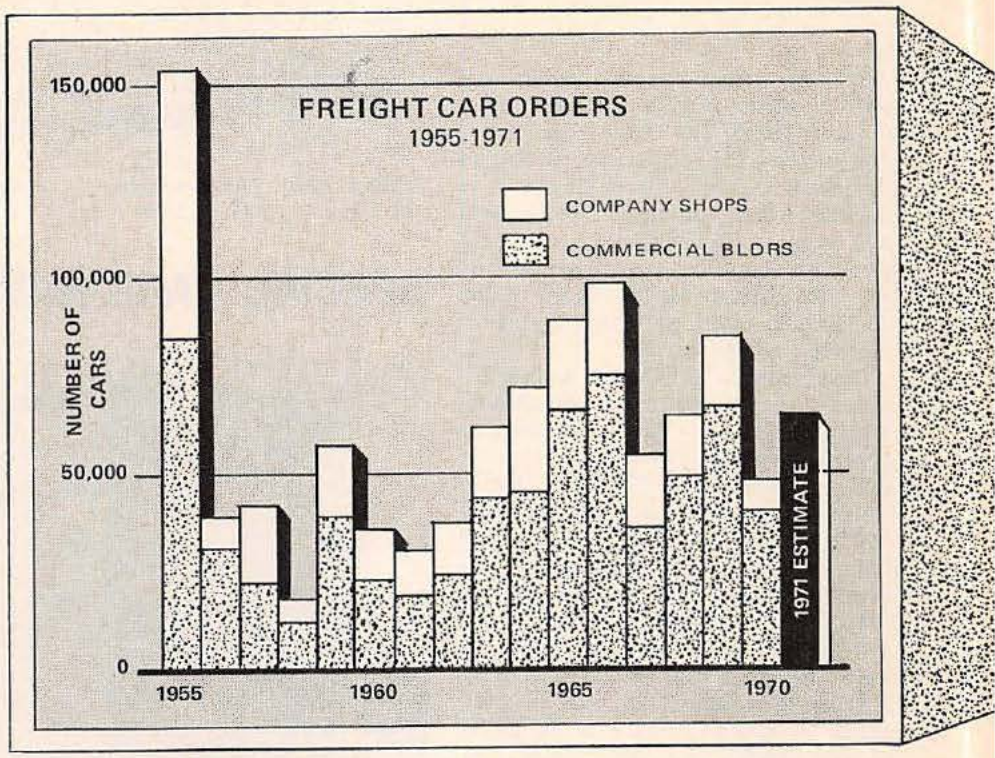
'71 OUTLOOK

Car orders to reach 65,000 in 1971

Builders' share in 1970 was highest in 32 years



By **FRED N. HOUSER,** Mechanical Editor

It has been observed that "if you're not part of the solution, then you're part of the problem." And while freight car problems seem to have been outdistancing solutions, the outlook is far from bleak in 1971.

Car orders this year should be up by one-third from 1970 with the total reaching at least 65,000. The usually cautious American Railway Car Institute is predicting the purchase of 60,000 to 65,000 freight cars. ACF's John S. Carlson, vice president and general manager of Shippers Car Line Division, goes along with these figures and is even more optimistic about 1972, when he expects orders to total 72,000.

In retrospect, 1970 was far from an absolute carbuilding disaster—the image some railroads and railway suppliers seemed almost eager to convey as the year progressed. Certainly, there were great financial pressures on railroads and their suppliers. But the fact remains that carbuilders got orders for more freight cars in 1970 than they did in 1967 and during three other years in the 1960s. The share of the total market won by commercial builders was the highest since 1938.

In addition to freight-car orders which this year promise to aggregate $1.25 billion (including those from private car lines), there is a growing market for transit and commuter cars. In 1971, this could total another $500 million with over 1,200 cars likely to be ordered (RA, Jan. 11, p. 22). Already there is a backlog of some 1,200 transit and commuter cars. In the next few years 3,000 more will probably go on builders' order books. There is also the possibility that Railpax could enter the market for intercity passenger cars.

● **Who will buy?** The recent low level of equipment acquisitions by railroads may soon give substantial impetus to car upgrading and rebuilding in both railroad and contract shops. It is also important to note the number of cars now being purchased or leased by private car lines.

John C. Felten, president of U. S. Railway Equipment, observes that while railroads curtailed their equipment purchases in 1970, private car lines and industries continued to acquire freight cars in increasing numbers. USRE notes that while only 28% of all freight cars ordered in 1966 represented private car additions, the figure had gone to 34% in 1968 and 42% for 1970's first eleven months.

Obviously, car requirements of shippers are not dependent on the financial state of the railroad industry, but reflect the shipping needs of manufacturing industries. However, the shippers' image of railroads is badly tarnished, and not solely because of railroading's cash position. Shippers have reacted negatively to what they see as steady degradation of service and a reluctance or inability of many railroads to reverse this situation.

Penn Central trustees have faced up to their car problem, explaining to the Senate Commerce Committee that "in the past five years the combined ownership of the former Pennsylvania and the former New York Central had dropped by 35,000 cars, or almost 20%." This, they say, is a major reason why "PC's service was unsatisfactory and why the railroad failed to keep pace with the growth of traffic in its territory." The road has budgeted $137 million for 7,492 new cars and will upgrade 20,000 more as "merely the start of what is expected to develop into a broad program of providing Penn Central with its fair share of an adequate national freight car fleet."

● **End to end?** An interesting facet of car supply has been a shortage of cabooses on Penn Central which frequently meant train delays. Many such bad-order cars have been shopped and 50 new cabooses, ordered from International Car, are now being delivered.

Karl F. Long, International Car president, recently observed that "financial restraints have resulted in postponements of new caboose acquisitions by some railroads during 1970 because such cars are not revenue producing." He adds that "passage of the Federal loan guarantee bill S.4464, as introduced by Senator Warren G. Magnuson, will provide the incentive to purchase much needed freight equipment, including cabooses."

Bethlehem Steel's John G. White, manager of sales, railroad products, finds some easing of the financial restraints that followed Penn Central's bankruptcy in June 1970, but says they have not been sufficient to spur railroad buying substantially. "If we should see passage of a Federal guarantee of loans," he continues, "we would shortly thereafter see a marked upturn in purchases."

Bethlehem expects up to 65,000 new

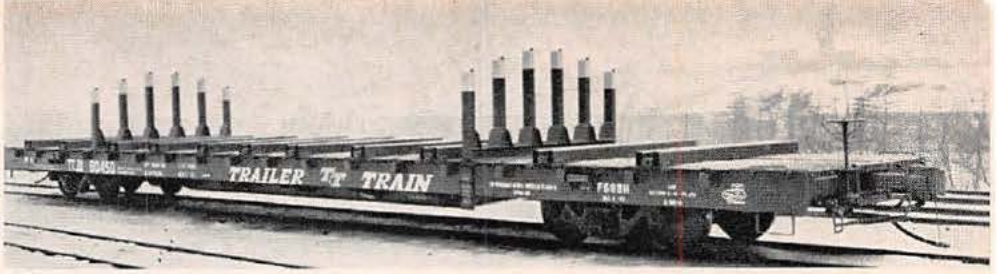
cars to be ordered this year and expects its rail volume to be about the same as it was in 1970. The shortage of hopper and gondola cars has been reflected in its recent orders and these give it a backlog which will carry into the second quarter. While there is no great optimism about the current year, White sees "the outlook for the decade of the 1970s indicating a significant upturn in railroad business activity."

The feeling at Fruehauf's Railcar Division is that "brighter days are ahead." Harry W. Crank, vice president and general manager, looks at the past three years and says it takes a degree of optimism to project an improved 1971. After a slow first quarter, Fruehauf expects a steady increase in production rates through the remainder of the year. "The money market is improving rapidly," says Crank, "allowing railroads to again pursue a needed car purchasing program." In addition, "the public is becoming aware of the plight of the nation's railroads and will be willing to support legislation that will ease some of the problems of the railroad industry."

Ortner has not yet felt any upturn in railroad purchases because of easing of financial restraints. However, 1970 was a "full capacity" year for the Cincinnati builder and 1971 is expected to be "good." Much of Ortner's business has been with shippers who have shown much interest in its Rapid Discharge self-clearing unit-train hopper car.

● **A partnership.** Pullman-Standard finds it difficult to predict the level of car orders this year since, according to President George L. Green, "much hinges on government action." If S.4464 and S.4463, the proposal for a national pool of general-service cars, are enacted, "1971 could be a good year for railway suppliers." In recent months, says Green, "railroad management has been reluctant to place orders for cars because of high interest rates; besides capital was being channeled to more profitable segments of the economy." In December P-S closed its 118-year-old Michigan City, Ind., plant because of obsolescence, but operates larger modern freight-car plants in Butler, Pa., and Bessemer, Ala.

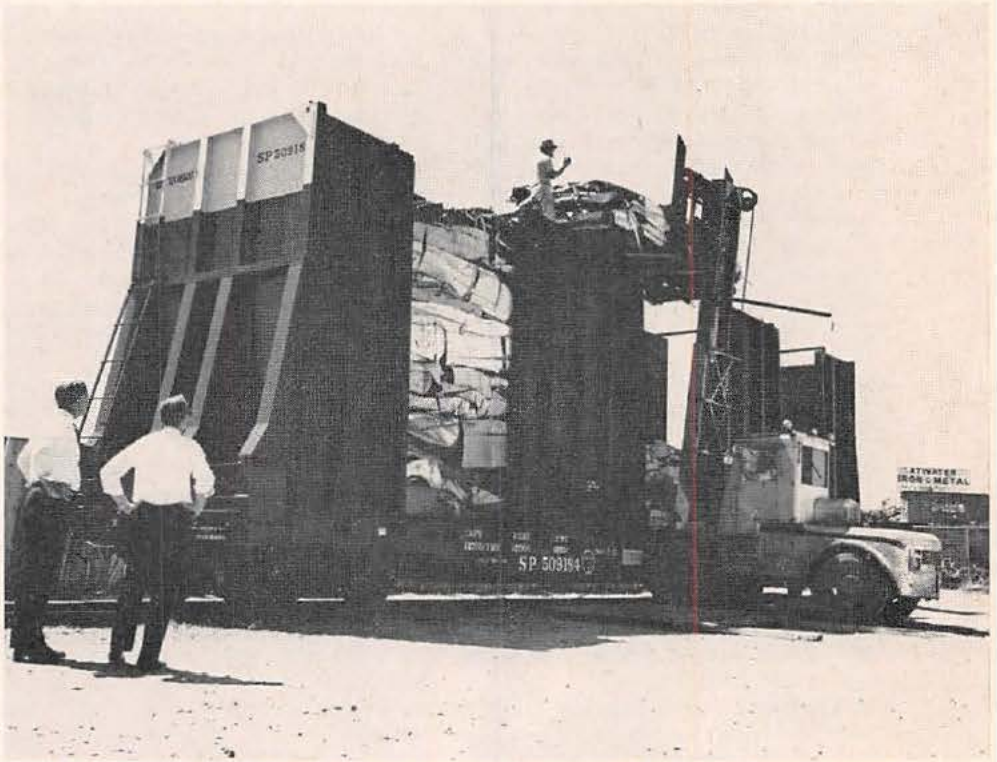
With aggressive piggyback marketing, it is expected that 1971's carloadings in this field will rebound to exceed the 1.54 million of 1969. Auto sales are also expected to be up; the combination of these leads Trailer Train to anticipate its 1971 requirements at about 2,000 new flat cars. C. D. Buford, TTX president, sees favorable action on S.4464 for Federal insurance of rail equipment obligations having "an immediate result, enabling railroads to



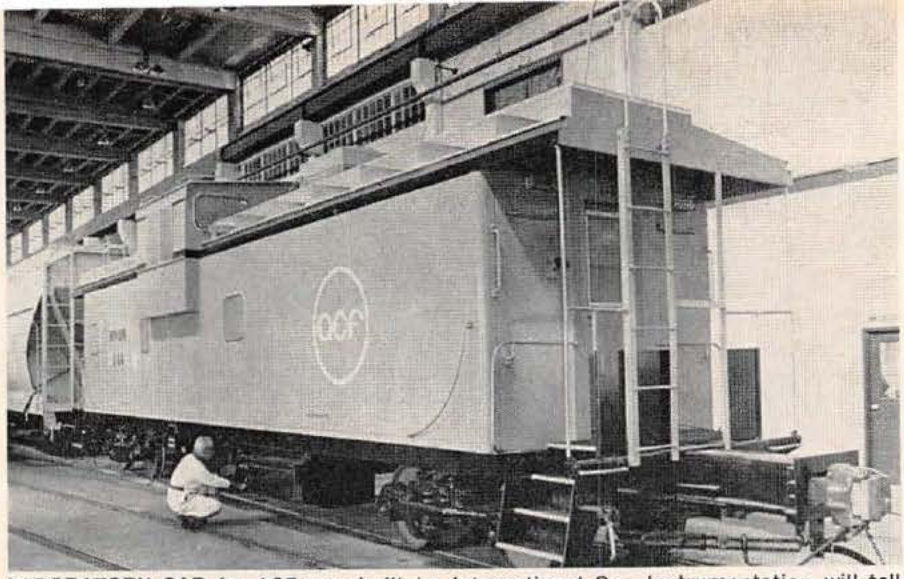
FINGER RACK CAR developed by Trailer Train and Bethlehem Steel permits longer and heavier loads of steel rods to be transported at substantial savings.

SPECIAL CARS HAVE GROWING ROLE

SIMPLIFIED LOADING and unloading is featured in full-door Minimax car developed for low-density ladings by U. S. Railway Equipment. Four-wheel version was tested.



SIXTY FLATTENED AUTOS can be loaded on car designed by Southern Pacific as spur to the recycling of metals. SP also develops money-saving ways to ship new vehicles.



LABORATORY CAR for ACF was built by International Car. Instrumentation will tell much about dynamic problems which are plaguing many contemporary freight cars.

UNIT TRAINS are moving growing portion of railroads' coal traffic. Cleveland utility leases 300 of these aluminum gondolas which were built by Greenville.

CHEMICAL PRODUCTS move in tank and covered hopper cars which frequently are leased by railroad customers. Pullman's Maxi-Flo car has features for pellets.

reduce their borrowing costs and greatly broadening the market for new rail equipment issues."

A large number of riveted tank cars are due to be retired this year in compliance with age limits imposed by the AAR. This could squeeze the supply if there is the predicted substantial upturn in the chemical industry. General American is looking for some opportunities for new business with metropolitan sanitary districts and public utilities.

GATX expects 1971 to be "another good year" primarily because of the stability of long-term leases with chemical, petroleum and food processing industries. The current backlog is approximately 1,000 tank cars with production expected to continue at the 1970 level. J. R. Scanlin, president of GATX, does not expect the full-service leasing of tank and other specialized freight cars to be affected by passage of any Federal loan guarantee. "However," he adds, "our finance leasing subsidiary, GATX/Boothe, might provide financing services to railroads seeking to acquire new equipment in connection with this legislation."

Union Tank is looking at 1971 "with cautious optimism." Robert D. McEvers, president, expects the first half to be about equal to the last half of 1970. "Given gradual improvement of the economy beginning late in the second quarter," he adds, "tank car sales and leases for the total year 1971 should be slightly better than those experienced in 1970."

Even declining interest rates will probably not mean lower costs for freight cars in 1971. For instance, Edgewater announced a 5% increase in the price of journal box lids, liners and wear plates, effective Jan. 18. Bethlehem Steel's recent and widely publicized price boost for plates and structurals would involve carbuilding.

Car prices have tended upward, but far slower than the general economy. Between 1967 and 1970, for instance, there was an over-all increase of about 6.5% in the price of covered hopper cars—and actually the increase would have been about 10% if the car market had not softened. While carbuilders' labor and basic steel went up more than 6.5%, some specialties such as truck side frames and hand brakes actually cost less in 1970 than in 1967.

Over a 15-year period the average price of freight cars has increased about 2% annually—more some years and less in others. In 1970 there was a lot of cost cutting in builders' quotations—an attempt to at least take care of the overhead on what could otherwise have been an idle carbuilding facility. ■

'71 OUTLOOK

UNIT TRAIN power for Detroit Edison has been delivered by EMD. Soon GE 3,000-hp units will go to same utility.

Will locomotive generation gap be closed?

While ASTRO-proposed replacement rate will not be met, orders will be up.

SUBURBAN TRAINS of Erie Lackawanna are powered by GE U34CH units in the East's first major push-pull operation.

Is there a generation gap in American motive power? Actually there may be several. There is the problem of restoring a locomotive fleet which is steadily increasing in age. There is apparently considerable indecision about the configuration and ratings of the next generation of road locomotives. Should the emphasis be on higher per-unit output, or on greater over-all reliability?

Locomotives which are bought now, under normal conditions, would not be retired until nearly 1990. That in itself is a challenge which locomotive builders and locomotive buyers must face. What will railroading after 1985 require in the way of motive power? For that matter, what will be needed by 1975?

B. B. Brownell, GM vice president and general manager of Electro-Motive, takes a stab at the near term: "The continued growth of the American economy will demand a significant increase in railroad service. Revenue ton-miles in 1970 came close to the record 767.9 billion of 1969 which surpassed the huge World War II figures when railroads carried most of the intercity traffic.

"Most experts predict that the railroads' share of ton-miles, versus all other forms of transportation, will remain at the current 41% through 1975. This means that rail ton-miles will reach 960 billion by 1975, based upon projections of the Gross National Product and other economic indicators—a 26% increase over 1970. Obviously, if the railroads are to handle this projected growth in freight traffic, a substantial increase in the nation's motive power fleet will be required."

● **Replacing the 5,000.** EMD sees presently a backlog of over 5,000 overage, economically obsolete road freight units that are immediate candidates for replacement. "Our studies indicate a minimum locomotive replacement market of 1,600 units a year for U. S. railroads if they are merely to keep pace with the replacement of 15-year-old locomotives," says Brownell.

The largest expansion and retooling in EMD's history is due for completion this year, giving the builder facilities which will increase component rebuilding capabilities and improve part supply, as well as meeting a continued high demand for locomotives. Had it not been for the GM strike, Electro-Motive would have delivered over 1,000 units to U. S. and overseas railroads last year.

"Our 1970 business, affected adversely by the loss of 10 weeks' production during the recent strike, was off 22% compared with 1969," says Brownell. "However, had we even been able to maintain our production schedules in 1970, our forecasted 1971 locomotive business will show a 12% increase over what might have been our 1970 total." This year production should be 1,200 units—200 for export.

● **The product mix.** EMD finds U. S. railroads interested in virtually every model in its product line. There is an even division between four-motor and six-motor road freight units now on the order books. And there is a fairly equal interest in lower and higher horsepower locomotives.

Canada's MLW-Industries looks for continuing growth in the production of diesel-electric locomotives. In both U. S. and Canada, MLW expects a continued second-generation re-equipment policy by virtually all railroads. According to R. L. Grassby, MLW's president and general manager, "with locomotive engineering now firmly established in Montreal, and with continuing emphasis on meeting specific customer needs and product improvement generally, MLW sees 1971 as a good year for locomotive bookings and billings in both the North American and overseas markets."

General Electric noted a leveling of domestic locomotive orders last year after they reached 1,700 units in 1969. "In 1971 domestic railroads may order around 1,200 locomotives, which is less than the ASTRO target of railroad needs of nearly 2,000 units per year," observes O. F. Vea, general manager of GE's Locomotive Department. "However, the total may be close to the level of new units needed to meet market and fiscal operating requirements of the nation's railroads."

To keep pace with the railroads' continued emphasis on high reliability, versatility and cost control, GE in 1970 constructed a new locomotive test fa-

FAST FREIGHTS of Canadian Pacific now are pulled by MLW's 3600-hp units; soon first 4000-hp MLW units will be in service.

CONVERSION by railroad's shop produced road switcher from original streamlined road freight unit; more are to be rebuilt.

cility equipped with the most modern instrumentation and equipment. Several new motive-power concepts were also introduced. Seaboard Coast Line ordered 66 U36Bs, the highest horsepower-per-axle locomotives available, and ten MATEs, GE's new trailing platform designed to double the tractive effort capabilities of a high-performance four-axle locomotive. The state of New Jersey purchased 23 new U34CH locomotives for Erie Lackawanna suburban service. They feature a diesel engine which drives both traction and auxiliary alternators, thus eliminating the necessity for a separate diesel-alternator set for auxiliary power.

● **Overseas power.** "The export locomotive market was extremely active in 1970," observes Vea. "By capitalizing on the technology of our domestic line, we are now offering overseas customers an alternator-equipped U26C locomotive which has already been ordered by South African and New Zealand railways."

"It becomes increasingly clear that electrification's many benefits for high-volume railroads will lead to their electrification early in the decade," Vea continues. "1970 saw bold new steps by the electric utility industry to make their energy source even more attractive to American railroads. This, coupled with the urgent need to control costs, accounts for the current high interest in electrification concepts."

Emphasizing General Electric's total commitment to rail transportation, E. Van Claxton, general manager of the Transit System Department, noted that "GE in 1970 became the first totally integrated commuter car manufacturer and received its first order—144 multiple-unit cars for Penn Central's New Haven Division."

● **Filling the gap?** While builders are turning out substantial numbers of medium-horsepower locomotives for lighter services, so also are certain railroad shops. Illinois Central is well along on a program for rebuilding road switchers for many years of added service. Southern Pacific considers its 1,750-hp GP9 and SD9 locomotives among the most reliable on the system and intends to get probably 15 more years out of many of them by putting over 300 through an extensive rebuild in its shops. There are no substantial changes—and no frills. Engines and traction motors are rebuilt; new wiring and switchgear is installed. This program has been proceeding for nearly a year.

Santa Fe's 1971 capital program includes rebuilding and conversion of 12 locomotive units for road switcher service. During 1970, six F7 streamlined road freight units were scheduled for this same conversion—stripped of their carbodies and fitted with hood-type superstructures. Santa Fe sees this as costing about one-third the price of a new medium-power unit. The 1,500-hp rating is ideally suited for contemporary yard operations and for road service on secondary lines.

● **There is electrification.** Canadian Pacific is seriously studying the costs of electrifying its mountainous main line from Calgary, Alta., to Vancouver, B. C., about 650 miles. The Canadian Transport Commission was told recently that this could be vital in successful movement of a five-fold increase in the flow of export bulk materials (coal, potash and sulfur) which is expected to occur in the next decade.

Presently CP puts slightly over nine trains daily across the mountains. With the doubling of total traffic by 1980 the road foresees the need for almost 17 diesel-powered trains. Even more could be scheduled with the higher speeds that would result from electrification. Already CP's study has indicated that solid-state electronics permits transmission of alternating current which can be converted for direct-current traction motors on the locomotives.

Southern Pacific has come to about the same conclusion. For many years that road has studied electrification of various segments of its system. Most recently it has worked with the utilities involved on the 800-mile line between El Paso, Tex., and Colton, Cal. Again, the growth of traffic to the Pacific Coast has been the major incentive.

Paul V. Garin, assistant vice president-research, explains that the major advantage of electrification "is what you realize in savings in the future. Southern Pacific is looking at commercial frequency and higher voltage than that generally used. It has generally been agreed that 50,000, 25,000 and 12,500 volts could be national standards for railroad electrification. SP is looking at a 50,000-volt system."

● **Last word, for now.** S. P. President B. F. Biaggini, summarizes his road's position: "We have had continuing studies for many years. We have a major study in progress now. When we get to the point where electrification on certain routes becomes economially attractive—because of volume or speed requirements or other circumstances—and when the rate of return is attractive in comparison with other projects we might undertake, then we'll look seriously at electrification. Until then, service demands—the need for more freight cars, for example—represent a more attractive investment."

During 1970 Edison Electric Institute, the AAR of the utilities, published the results of a five-year investigation of American railroad electrification by a special EEI task force.

EEI notes that 60 million diesel locomotive horsepower in the U. S. make the railroads the largest non-utility electric power producer in America—accounting for over half the "private" power generated annually. If rail freight traffic is sustained, and if electrification of main routes were to be accomplished, the utilities could look to future energy sales of 20 to 25 billion kilowatt-hours yearly for traction.

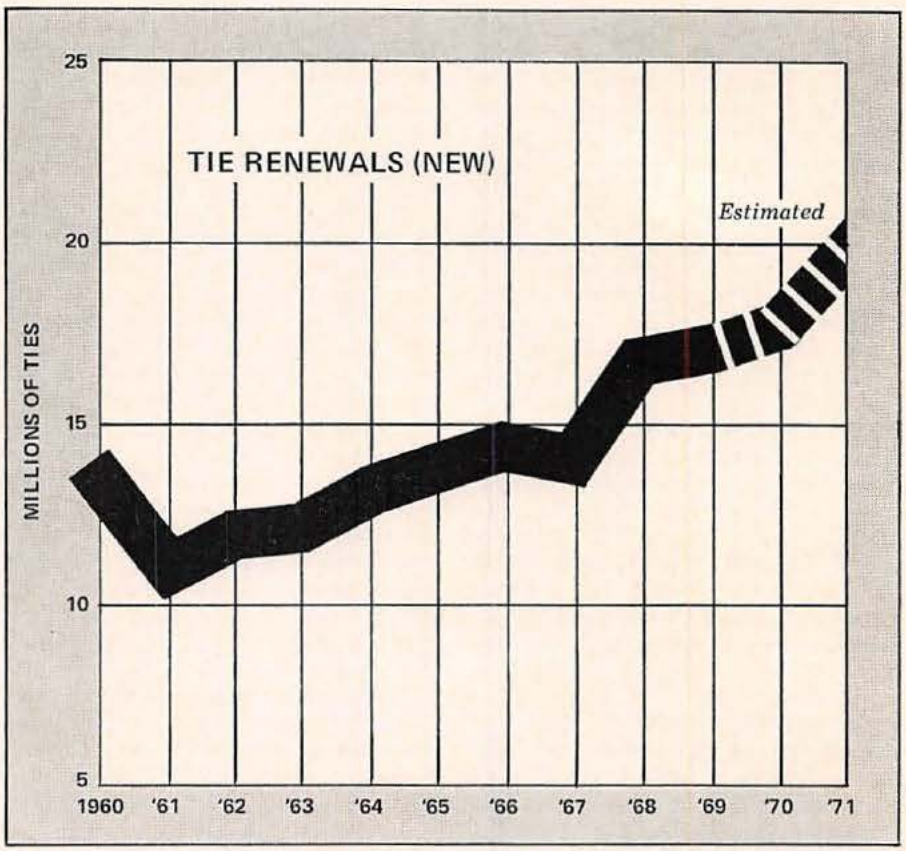
● **Ecology and efficiency.** In an increasingly pollution-conscious era, the fuel economy of the rail mode seems not to have received the emphasis it should. Economy is still the name of the game, whether it be electric or diesel-electric locomotives. At a time when there is little certainty about future fuel and power costs for locomotives, it should be stressed that railroads produce more transportation per gallon and per kilowatt-hour than other transport modes.

A Federal task force has recently been organized to look into the nation's total energy situation. Any such group, charged with development of a "comprehensive national energy policy" should not give rail traction the quick brush-off traditional when government considers transportation. ■

'71 OUTLOOK

Shadow of FRA regulation looms

In projecting stepped-up maintenance activity in 1971, railroads have kept in mind the fact that FRA now has authority to regulate track safety.



IF TIE RENEWALS on Class I railroads reach the 20-million mark predicted for 1971, they will be higher than for any year since 1957.

By **MERWIN H. DICK,** Engineering Editor

In maintenance of way, 1971 is to be a year of transition. It will go down in history as the year in which, in fixed-property maintenance, the switch was made from a non-regulated to a regulated activity.

Heretofore, from the time the railroad industry came into existence, railway managements have had a free hand in deciding how much, or how little, was to be spent on property maintenance. If this meant that there were years in which the properties did not get as much attention as was needed for proper maintenance, the situation was accepted as a regrettable but inevitable consequence of the need to achieve a proper balance between income and outgo.

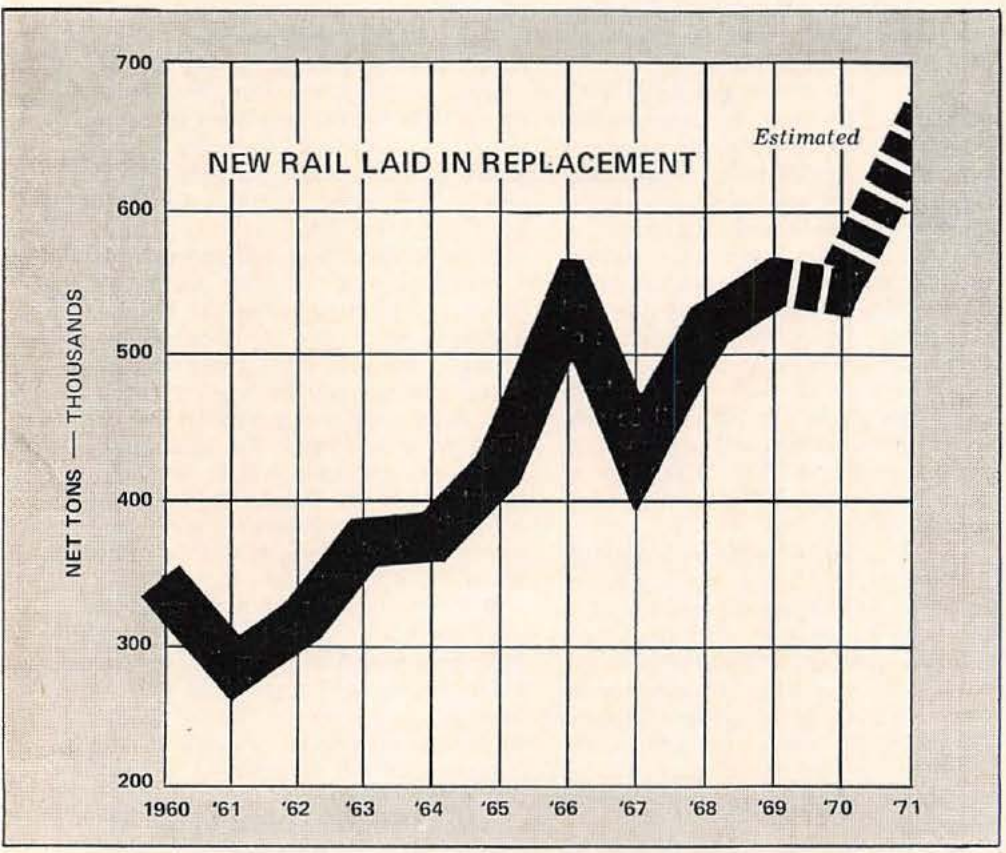
● **Business as usual?** As 1971 was getting under way, that situation still prevailed. Management was still in a position to call the shots on property-maintenance allotments. Budgets for 1971, duly prepared by engineering departments, had been acted upon by managements. Presumably, everything was being done on a business-as-usual basis, with managements on most roads being prepared to make adjustments, up or down, on a monthly basis, depending on business forecasts as submitted by traffic departments.

But this business-as-usual approach to 1971 was being conducted under a shadow—the shadow of the Federal Railroad Safety Act of 1970. In making their projections for maintenance programs, engineering departments and managements alike were fully aware that the Federal Railroad Administration now had authority to regulate track safety. They were aware that a set of track standards was being formulated and that the machinery for imposing them on the railroads was in preparation. It is now apparent that FRA regulation of track safety will get under way around midyear, thus raising a number of questions that are certain to be weighing heavily on railroad engineers and managements.

The paramount question is this: How stringent will the government standards be? Almost as important is this question: Will FRA authorities be satisfied to accept the AAR's recommended track standards as their own, or will stiffer rules be adopted?

● **No alternative.** Until answers to these questions are known, railroads would appear to have no alternative but to proceed as usual in formulating their 1971 property maintenance pro-

over M/W activities



NEW RAIL INSERTIONS, at the rate forecast for 1971, will be at a level more than double that for 1961, which was the lowest in history.

grams. But, would they have any alternative anyway? Suppose the FRA standards had been adopted and published and it was apparent that they would require a general upgrading of existing track standards. What would be the reaction of financially hard-pressed railroads? This question may confront railway managements with their greatest dilemma of 1971.

In reality, what has been the reaction of the railroads to the threat of Federal regulation of track standards? This question applies both to what happened in 1970, when regulation did not become a certainty until late in the year, and to 1971, when regulation will become a fact of the railroad track man's everyday life.

Some clues are provided by figures furnished Railway Age by the chief engineers of most Class I railroads. These figures cover the quantities of new ties and rails inserted in replacement in 1970 and the amounts planned for 1971. They also include the miles of track surfaced in 1970 and programmed for surfacing in 1971. These areas of activity account not only for the greater proportion of maintenance expenditures; they are also activities that directly affect the condition of the tracks.

● **No marked trend.** The figures for 1970 spell out no particular theme. Take tie renewals for instance. According to estimates made on the basis of the figures furnished by the chief engineers, it is estimated that Class I railroads installed 18 million new ties in existing tracks in 1970. This was an increase of 900,000 ties, or 5.3%, compared with the 17,100,000 new ties inserted in 1969, according to the Committee on Ties and Wood Preservation of the American Railway Engineering Association. This increase is no more than would be expected by normal factors, such as the increase in replacement needs brought about by the cyclical nature of tie renewals. It continues a trend that, except for one year, has remained unbroken since 1961.

Rail renewals actually declined slightly in 1970. Again based on figures furnished by chief engineers, it is estimated that Class I railroads installed 550,000 short tons of new rails for replacement purposes last year. This compares with 559,714 tons laid in 1969, according to figures compiled by the Association of American Railroads.

● **Flat curve for surfacing.** Figures on track surfacing are another indication that M/W activities remained on a flat curve in 1970. A total of 32 roads reported that they surfaced 36,800 miles of track in 1970, almost precisely the same mileage surfaced by these roads in 1969.

In view of the sidewise movement of the actual amount of M/W work done in 1970, it is interesting to note what happened to dollar expenditures for maintenance of way and structures. Based on official figures for the first nine months it is estimated that Class I roads spent $1.623 million for maintenance of way and structures in 1970. This was 8% more than was spent in 1969. It becomes pertinent, therefore, to inquire whether the productivity of the M/W forces is keeping up with wage and cost inflation.

● **How 1971 shapes up.** Projections of the major indices of M/W activity for 1971 tell an entirely different story than the actual figures for last year. Here's how the year shapes up, based on the plans of chief engineers:

● **Tie renewals.** If the chief engineers are allowed to carry out their plans for this year, Class I roads, it is estimated, will insert about 20 million new ties for replacement purposes, an increase of two million ties, or 11.3%, over estimated insertions for 1970. If this expectation is realized, tie renewals will be brought to the highest level for any year since 1957.

● **Rail renewals.** Present indica-

FEDERAL TRACK STANDARDS ARE NOT YET KNOWN

tions, based on the plans of the chief engineers, are that rail renewals are expected to get back on the recovery trend this year. If the top engineers have their way, Class I roads will install about 650,000 short tons of new rail for replacement purposes in 1971. This would be 91,000 tons, or 16.5%, more than the estimated figure for 1970. This increase, if realized, will also bring new rail insertions to the highest level for any year since 1957.

● **Track surfacing.** Thirty-two roads report that they plan to surface 39,057 miles of track in 1971. This will be 2,254 miles, or 6.1%, more track than the same roads surfaced in 1970.

What these figures are saying is that, on balance, the various major categories of activity will be in an uptrend this year—that is, unless engineering departments are forced by circumstances to revise their plans downward during the year. The figures do not mean that the uptrends indicated will be experienced uniformly on all roads. Indeed, some roads, and some pretty big ones at that, are charting smaller programs than for the previous year.

What is apparent is that the programs planned by individual lines are based on their particular needs, tempered no doubt in many cases by financial limitations. However, on those roads that are projecting bigger programs for the year, the question might be raised whether the increases in any sense anticipate Federal regulation of track standards. In a spot check, this question was put to a number of chief engineers. The answer, invariably, was that, since the content of Federal track standards has not been determined, railroads are not in a position to prepare for them. Even so, it would not be surprising if it developed that at least some engineering departments, in making their plans for 1971, have allowed themselves to be influenced by the knowledge that the tracks and other properties will come under Federal inspection some time during 1971.

● **Implementing the Safety Act.** Under the Federal Railroad Safety act of 1970, signed into law by President Nixon last Oct. 16, the Secretary of Transportation is required to prescribe rules, regulations, orders and standards for all areas of railroad safety. Some of these areas were already covered by existing statutes administered by the Federal Railroad Administration. However, since none of the earlier statutes provides for authority over track and roadbed, the new act for the first time brings track safety under the regulation of the Federal government.

The act itself does not establish track standards. This is to be done by the Secretary of Transportation, presumably through the FRA. It is specifically stated that regulation developed under the act shall be issued not later than one year after the date of enactment of the bill, and that such standards shall be "based upon existing safety data and standards." Among other provisions of the safety act are these:

—Violations of rules and standards established under the act shall be subject to penalties of not less than $250 nor more than $2,500. "Each day of such violation shall be considered a separate offense."

—If a facility or piece of equipment is found to be in an unsafe condition, an order may be issued prohibiting further use of the facility until the unsafe condition has been corrected.

—States may adopt or continue in force any rule or regulation relating to railroad safety until such time as the FRA has placed in effect a rule or regulation covering the same subject matter.

—States may participate in carrying out inspection and investigative activities under the act, provided they have met certification requirements set forth in the act.

—For use in administering the act, there may be appropriated an amount not to exceed $21 million for each of the fiscal years ending June 30, 1971, June 30, 1972, and June 30, 1973.

Money for use in implementing the act must still be made available by Congress. It is understood that the initial funds needed are now in the "budgetary process," but that they may not become available until March.

● **Until the money comes ...** FRA, until then, must operate within its present fiscal capabilities in developing track standards and setting up the machinery for putting them into effect. Preliminary moves in the direction of compiling track standards were made months before the bill became law. After the date of enactment, FRA began a series of informal conferences and meetings with interested groups, including the Engineering Division of the Association of American Railroads and the Brotherhood of Maintenance of Way Employes.

The AAR's recommended track standards (RA, Nov. 9, p. 17) are, of course, receiving consideration. Independent consultants have been asked to render an opinion regarding these standards. The AAR standards have also been analyzed by a task force set up within the FRA.

The procedure now will be to devel- a preliminary set of track standards, which will be published in the Federal Register. After this will come the formal stage of rule-making during which hearings will be held involving both written and oral testimony. Out of this process will come the final standards which railroads will be required to put into effect. Opinion in the FRA is that it will be well into the spring before a draft of standards will be made available to the public.

● **Could begin next summer.** Not until the FRA's budget requests have been granted will it be possible to start expanding the office and field staff as necessary to implement the act. But at least tentative plans have been laid, and it is expected the machinery will be in readiness by summer.

Administration of the safety act will come under the FRA's Bureau of Railroad Safety, which is headed as director by Mac E. Rogers. It will be the responsibility of the Bureau to carry out the inspection and surveillance activities necessary to assure compliance with government standards. Direct field responsibility for inspection and enforcement will be exercised through the eight regions into which the BRS has divided the country.

Building a field organization is expected to require several years. At the outset, due to funding and staff limitations, actual inspection of any more than a small fraction of the total railroad mileage is not contemplated. The initial plan is to monitor the records of inspections made by railroads themselves. From this process, territories will be pinpointed that will appear to need closer inspection, which will be done on a spot basis. These inspections will be made by personnel riding in highway-railway vehicles moving at slow speed, prepared to stop for a closer look if this seems indicated. ■

'71 OUTLOOK

$1-billion, 10-year market seen in systems control equipment

By ROBERT W. McKNIGHT
System Controls Editor

As railroads (and transit authorities) head into 1971, their capital equipment spending plans are tuned more than ever to the realities of current economic conditions. Capital budgets for communications, data processing and signaling are in line with expenditures made during 1970.

In the '60s, railroads and transit authorities spent over $800 million—capital accounts—for system controls. Projected capital spending for 1970-71 indicates that the total in the '70s will probably run over $1 billion. During the '70s, a greater portion of the control systems capital expenditures will be for communications and computer equipment. For one thing, most railroads are well-equipped with signal systems that can handle present and future traffic growth. But on the communications and computer side, tremendous growth is predicted.

● **Big growth in communications.** Railroads will be spending more for communications equipment and services to keep pace with demand. Communications usage has been growing at a rate somewhat comparable to that of other communications users: Data transmission volumes are increasing at rates of 40% to 50% annually. Voice traffic (telephone) is rising at 25% to 30% annually. Message or administrative traffic is showing a growth rate of 10% annually.

A recent survey of U.S. and Canadian railroads and transit authorities indicates this, for communications capital budgets for 1971: Class I railroads (U.S.), $20 million in capital spending; Canadian railroads, $25 million; transit authorities, $5 million. (It should be noted that both Canadian National and Canadian Pacific Rail are communications common carriers.)

In the data-processing area, $7.2 million capital-equipment budgets break down this way: $5 for U.S. Class I railroads, $2 million for Canadian railroads and $200,000 for transit authorities.

The 1971 capital budgets for signal equipment are: U.S. Class I railroads, $25 million; Canadian railroads, $15 million; transit authorities, $5.8 million.

Total projected equipment spending by railroads and transit authorities comes to $333.5 million for 1971. Other-than-capital costs include leased equipment costs as well as replacement of equipment that is charged to operating or maintenance accounts. These costs in the data-processing-equipment category are considerably higher ($88 million vs $7.2 million) than capital costs because most firms lease computers and peripheral equipment.

Also, practically all U.S. railroads lease communications facilities and equipment for off-line traffic offices. However, under recently revised tariffs which allow customer-owned equipment to be interconnected to the public telephone network, some railroads may purchase off-line computer terminals, such as teletypewriters, for use in off-line traffic offices.

● **Shift toward private facilities.** Money for communications will be spent in two major areas: (1) For equipment and facilities to expand the railroads' privately-owned communications plant, and (2) for services and facilities leased from communications common carriers or equipment manufacturers. Obviously, many roads will spend money in both areas. But a shift toward more expenditures for private communications is discernible and may pick up rapidly if present Federal Communications Commission rulings hold up. Rate increases are due for most common carriers to meet inflation and to meet the growing demands for plant expansion to handle customer requirements.

On Feb. 15, revised (and generally higher) tariffs will go into effect for the Telpak bulk communications services. FCC ordered telephone and telegraph companies to "file revised tariffs that will extend the benefits of the Telpak shared rates to all private line customers, without regard to their lines of business."

● **Interconnection permitted.** Interconnection of customer-owned facilities with the public telephone network is now permitted. Railroads thus can have both lease and buy policies. Some railroads use a combination of their own equipment with that of the communications common carriers. Burlington Northern and Santa Fe, for example, purchase telephone exchange equipment which is interfaced between their privately-owned communications systems and the public telephone network.

For railroads, as well as others, relaxed interconnection regulations mean that they are not required to lease the connecting or interface equipment from the telephone or telegraph companies. This could be an incentive for railroads to purchase their own dial telephone exchange equipment, data sets and computer input/output units, all of which can be interconnected to the public telephone system. Many railroads will find it advantageous to purchase such units for off-line traffic offices, which heretofore had to be equipped with telephone- or telegraph-company equipment.

Those railroads in the U.S. with private microwave systems are now in a position in which they may be able to make a profit by providing communications services to non-railroad firms. FCC has taken the position that there may be specialized common-carrier services in the domestic public point-to-point microwave radio service in competition with the telephone and telegraph companies. Several firms have proposed to offer such services. So far only one railroad has seized this opportunity—Southern Pacific.

SP has formed a subsidiary company—SP Communications Co.—which has applied to the FCC to provide specialized services via its microwave system extending from Seattle to San Diego, and from Los Angeles to St. Louis.

Because the microwave equipment for the specialized services would probably operate at different frequencies than now used for railroad communications, there would be some expense

necessary to provide this equipment. The real opportunity, notes one communications engineer, is that at a minimum cost a railroad with its private microwave system could probably provide additional communications services.

● **HVDC interference.** Among the problems of the 1970s, this is one example: A high-voltage, direct-current transmission line, constructed between The Dalles, Ore. and Sylmar, Calif. (near Los Angeles), operates at 800,000 volts and carries 1,800 amperes current. Tests made on railroad communications circuits near the HVDC line indicate that serious interference does exist in a part of the spectrum. Interference (electrical noise) was generated by one of the power system's converter/inverter (AC to DC) generating stations. This interference falls directly within the operating frequencies of the railroad's carrier-derived communications systems.

The carrier systems affected are utilized for voice transmission, dispatchers' telephones, for analog data, e.g., hotbox detectors; and for digital data, e.g., teleprinter circuits and centralized traffic control coding equipment. Tests carried out on these communications circuits showed that the noise or electrical interference in many cases approached and sometimes exceeded normal operating requirements. "Dependable operation of railroad carrier systems during these noise conditions is impossible," said one communications engineer after viewing interference charts made when the HVDC line was in operation.

● **Teleprocessing.** The impact upon communications by the computer has been tremendous, and computer requirements for communications links will continue to grow at a rapid pace. (The on-line, real-time computer systems of railroads are really teleprocessing systems, which, says IBM, are a form of information-handling in which a data-processing system utilizes communication facilities.)

While many railroads centralize computer operations at headquarters, Chesapeake & Ohio/Baltimore & Ohio are moving to the regional computer-center concept. Six area control systems, each built around a computer for handling data processing on a regional basis, will be located at Baltimore, Richmond, Huntington, W. Va., Cincinnati, Pittsburgh, and Detroit, each linked to the headquarters computer at Baltimore.

From an operational standpoint, Illinois Central has combined communications and computer-services departments. "Merging of communications and data processing is a gain for both," says George Pipas, vice president communications and computer services. "The systems knowledge of data processing is available to communications experts, and the expertise and technical ability of the communications engineer is available to the systems analyst and data-processing manager."

● **EDP in the '70s.** Major trends in data-processing and management-information services activities in the years ahead include refining of computer programs to make them more efficient; expanded interchange of data between railroads, often on a direct computer-to-computer basis; greater use of simulation techniques for solving everyday problems; and exchange of programs among railroads.

"Exchange of waybill car-movement data offers our industry its greatest potential for cost reduction and service improvement," says R. O. Hughes, director-management services Detroit, Toledo & Ironton. At least 30 railroads are now exchanging data on per-diem settlements via direct communications links or on magnetic tape. Shortly, AAR's TRAIN system will operate on test basis as a clearing house with five railroads in car-repair billing. The TRAIN computer will calculate each road's car-repair charges including balances and forward complete information to each road. Interline revenue settlements averaging about 400,000 per month are also being considered for TRAIN computer processing.

At present, AAR's TRAIN system is handling about four million interchanges monthly, and producting two million junction slips monthly for the 66 participating railroads and some private car lines. Present efficiency is such that over 80% of the interchanges are reported by TRAIN's computer within five days of the actual interchange move. AAR has just received an IBM 360/50 computer, which will replace a 360/40 model.

● **Economic pressures.** "The economic pressures will certainly be felt greater in the '70s than in the '60s. Perhaps the '70s will bring dramatic changes in generations of computers. However, in large communications/computer systems, even if theoretically compatible, the change from one system to the next improvement poses major economic as well as physical impacts upon the industry," says J. W. Germany, general manager, system management services, Southern Pacific.

"Hopefully the '70s will allow the railroads to measure performance on their movements on an interline basis and, more importantly, to provide a car scheduling system to aid in improving the performance and reliability," he says.

At least one major railroad has asked AAR's Management Systems Department to consider having the TRAIN computer provide interchange reports on individual cars as they move across the country. From these reports the railroad could measure service performance. This information is now available if the railroad directs an inquiry to TRAIN. The proposed change would be an automatic generation of transmittal to the railroad upon receipt by the TRAIN computer of an interchange move.

"The communications/computer sys-

Total '71 RSC market:

Capital Spending, U. S. Railroads

Communications	$20	million
Data Processing	5	million
Signaling	25	million
Total:	**$50**	**million**

Capital Spending, Canadian Railroads*

Communications	$25	million
Data Processing	2	million
Signaling	15	million
Total:	**$42**	**million**

Capital Spending, U.S. & Canadian Transit

Communications	$ 5	million
Data Processing	0.2	million
Signaling	5.8	million
Total:	**$11.0**	**million**

Non-capital Spending, U.S. Railroads

Communications	$30	million
Data Processing	75	million
Signaling	37.5	million
Total	**$142.5**	**million**

Non-capital Spending, Canadian Railroads*

Communications	$37.5	million
Data Processing	10.0	million
Signaling	22.5	million
Total	**$70.0**	**million**

Non-capital Spending, U.S. and Canadian Transit

Communications	$ 7.5	million
Data Processing	3.0	million
Signaling	7.5	million
Total	**$18.0**	**million**

*Canadian National Telecommunications and CP Telecommunications are communications common carriers in Canada.

Note: Capital spending, as used here, refers only to planned equipment outlays and does not include related costs.

Note: Non-capital spending includes leased equipment costs.

ACI LABELING DEADLINE IS NOW MAY 1, 1971

tem should support increased resource utilization in the company, while at the same time minimizing the resources necessary to attain that objective," Germany says.

● **Program exchange.** Several railroads have exchanged computer programs—either free or for payment—and the practice will no doubt be widely expanded in the coming years. Burlington Northern, for example, purchased Canadian National's network-analysis simulation program. This cost "a lot less than it would have cost to hire and train management science and industrial engineers and the people with the kind of competence to develop a program of this kind, and it got us on the air a lot faster," says Frank H. Coyne, vice president-finance, formerly vice president-management services.

● **Reducing the paper blizzard.** One of the complaints about data processing is that computers and their associated high-speed printers produce too many reports. Norfolk & Western recently held a two day "Operation Wastebasket" to determine which reports could be eliminated. Dr. Paul Zeis, director of research, said N&W was getting more than 5,000 different reports. About four million pieces of paper were being printed monthly by the computers in Roanoke, operating 2,128 hours and printing about 100 million lines. In 1969, N&W spent approximately $2.5 million for forms and paper that weighed 1,820 tons.

Over 250 reports were eliminated from the 600 involved in the two-day examination. In one instance, a daily form of 3,000 pages was eliminated. Many reports were consolidated with others and improved to provide more meaningful information.

In another area of paperwork revolution, some railroads are designing forms and reports so that they can be processed for computer usage via optical character-recognition devices. Use of OCR devices can eliminate some keypunching efforts by providing direct input of information onto magnetic tape or computer memory units.

● **Keep ACI moving.** With less than 10% of the interchange fleet unlabeled, the deadline for applying automatic car identification labels has been set back to May 1, 1971. AAR's Operating-Transportation Division General Committee made the move, to make the deadline more realistic.

Best estimates are that about 150 ACI scanners are in service or on order, with orders due to climb during 1971. At least three railroads will blanket major classification yards with scanners that will send data directly to process-control computers and materially aid in the control operation of the yard. Detroit, Toledo & Trenton installed such an ACI system in 1968. Santa Fe has ordered scanners for installation at Argentine Yard, at Kansas City, while CP Rail has orders in for ACI scanners to be installed at Alyth Yard near Calgary, Alta.

One of the biggest ACI projects, that of the General Managers' Association of Chicago for a terminal information and control system, is nearing the phase where a proposal will be sent to firms requesting bids on furnishing a complete operating system including 109 scanners to be located at 40 strategic points to feed car-movement information into a central computer complex from which reports will be made to the 22 GMA member roads.

● **Interface standard.** In keeping ACI moving, AAR's Communications Signal Section has developed and approved standards for the interface hardware that is placed between the decoder output from the ACI scanner and the connecting communications lines. Also, the C&S Section Ad Hoc Committee to Study and Develop ACI Hardware Standards has come up with recommended on-site maintenance practices and test labels for checking upon the operation of ACI scanners.

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And that may put things right back in the lap of Congress—perhaps for other panic consideration, but more hopefully for reasoned amendment to the law governing rail management/union relations. What was it that the Administration pointed out during the recent unpleasantness? The Administration pointed out that railroads (as part of the 41% of intercity freight ton-miles they account for) handle 46% of meat and dairy products, 74% of canned and frozen foods, 71% of household appliances, 76% of automobiles and auto parts, 78% of lumber and wood (products), 40% of furniture, 63% of chemicals, 68% of primary metal products and 86% of pulp and paper traffic.

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— The President would have three new options which he might choose from, after T-H strike-stopping provisions ran their course: (1) To extend a cooling-off period by 30 days, if agreement seemed near; (2) to order partial operation of the industry involved; or (3) to require that management and labor submit "final" offers, one of which would be chosen and imposed by a neutral board.

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ACI LABELING DEADLINE IS NOW MAY 1, 1971

tem should support increased resource utilization in the company, while at the same time minimizing the resources necessary to attain that objective," Germany says.

● **Program exchange.** Several railroads have exchanged computer programs—either free or for payment—and the practice will no doubt be widely expanded in the coming years. Burlington Northern, for example, purchased Canadian National's network-analysis simulation program. This cost "a lot less than it would have cost to hire and train management science and industrial engineers and the people with the kind of competence to develop a program of this kind, and it got us on the air a lot faster," says Frank H. Coyne, vice president-finance, formerly vice president-management services.

● **Reducing the paper blizzard.** One of the complaints about data processing is that computers and their associated high-speed printers produce too many reports. Norfolk & Western recently held a two day "Operation Wastebasket" to determine which reports could be eliminated. Dr. Paul Zeis, director of research, said N&W was getting more than 5,000 different reports. About four million pieces of paper were being printed monthly by the computers in Roanoke, operating 2,128 hours and printing about 100 million lines. In 1969, N&W spent approximately $2.5 million for forms and paper that weighed 1,820 tons.

Over 250 reports were eliminated from the 600 involved in the two-day examination. In one instance, a daily form of 3,000 pages was eliminated. Many reports were consolidated with others and improved to provide more meaningful information.

In another area of paperwork revolution, some railroads are designing forms and reports so that they can be processed for computer usage via optical character-recognition devices. Use of OCR devices can eliminate some keypunching efforts by providing direct input of information onto magnetic tape or computer memory units.

● **Keep ACI moving.** With less than 10% of the interchange fleet unlabeled, the deadline for applying automatic car identification labels has been set back to May 1, 1971. AAR's Operating-Transportation Division General Committee made the move, to make the deadline more realistic.

Best estimates are that about 150 ACI scanners are in service or on order, with orders due to climb during 1971. At least three railroads will blanket major classification yards with scanners that will send data directly to process-control computers and materially aid in the control operation of the yard. Detroit, Toledo & Trenton installed such an ACI system in 1968. Santa Fe has ordered scanners for installation at Argentine Yard, at Kansas City, while CP Rail has orders in for ACI scanners to be installed at Alyth Yard near Calgary, Alta.

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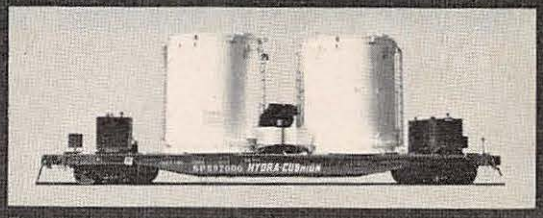
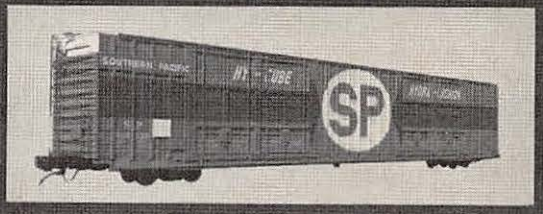


Flat Cars with Hydra-Cushion underframes give missile motors a gentle ride.



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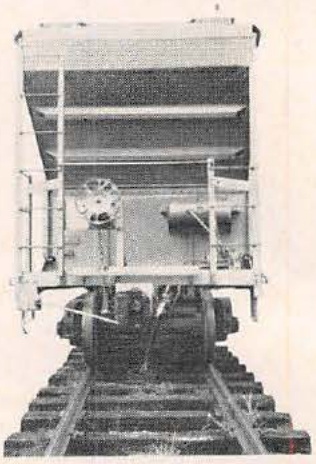

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'71 OUTLOOK

A NATIONWIDE RAILROAD STRIKE on Dec. 10, 1970, was settled by an Act of Congress. March 1, 1971, is the next crisis date. Will history repeat itself?

LABOR: Another legislated "agreement"?

By **GUS WELTY,** Senior Editor

Congress was the big mover and shaker in rail management/labor relations in 1970—and Congress may have still more moving and shaking to do in 1971, before a number of hangover disputes are finally settled.

This forecast is not an optimistic one. Hopefully, it will be inaccurate. But at this point, any other forecast would be strictly from Pollyanna—with Congress already mixing into one major wage/rules dispute, with a number of other holdover wage cases still open, with the fireman-manning question unsettled, and with the shopcraft unions again driving for wage gains.

So, perhaps the big question is not *whether* Congress will be involved, but *how* that involvement will take shape.

There is a certain amount of irony in all this. On a high level, management and labor seem to be developing a new rapport on issues of mutual interest—ASTRO, for instance. At the same time, at the bargaining level there seems to be less and less ability to agree. Even under the best of circumstances, of course, there will always be conflict in negotiation. But things are getting out of hand, when you can not recall a single major settlement in a full year—and when Congress is twice forced to legislate "agreement" within the frame of a single year, as happened in 1970.

● **Congress moves in.** In the first exercise of Congressional muscle last year, the lawmakers did stay within predictable boundaries. Negotiators for management and four shopcraft unions had made an agreement. Congress assumed final jurisdiction only after members of one of the four organizations rejected the settlement in a referendum. And the Congressional solution was to impose the terms which the bargainers had already agreed upon.

In its second intervention, however, Congress threw the "rulebook" out the window. Faced with a potential nationwide strike by four unions (including the largest operating and non-op organizations), President Nixon asked for a legislated postponement. Congress gave him more delay than he asked for. Congress also gave the unions a wage increase—and ignored rules-change recommendations made by the same emergency board which had set up the wage-increase schedule.

Now, it is a new Congress sitting in Washington. But it is still a Congress dominated by men of a different political faith than that of the President. And, while the President has made his position clear—in proposing new labor legislation early in 1970 and in plugging it again during the late-'70 crisis—it remains to be seen what position(s) the restructured Federal legislature may assume.

● **"Business as usual."** In the meantime, there will be the usual recriminations as to which party to a rail management/labor dispute is the one that won't bargain. There will be, probably, the usual union reluctance to giving up anything—on work-rule changes, for instance—in return for wage boosts. And there will be the usual grinding of the rumor mill—as there was in the December crisis when union sources claimed, after the fact, that railroads could have had a better deal from the organizations than they got from Congress.

In 1970, railroads saw a new kind of resistance from the big brotherhoods. They will see more of it in 1971, as the Brotherhood of Railway and Airline Clerks and the United Transportation Union—the big two—head toward conventions. There will be from-the-ranks pressures of various kinds on UTU President Charles Luna (who won't be running for re-election) and on BRAC President C. L. Dennis (who apparently will be). Inevitably, management will also feel these pressures.

At this point, BRAC would seem to have the bigger share of internal difficulties—some stemming from the handling of the wage case, others reflecting the politics of a major union approaching a convention (May in Miami Beach). UTU is also coming up on a convention (August in Miami Beach), with the election of a new president on the agenda. And for both unions, there is a certain amount of additional restlessness directly related to the bargaining procedure, the delays associated with it, and the fact that minorities in both organizations think that the rank-and-file should be the final authority on accepting or rejecting agreements.

Other pressures on BRAC and UTU come from the outside—with BRAC very much aware of rivalry with the Teamsters, and with UTU taking an occasional whack from the Brotherhood of Locomotive Engineers.

● **Everywhere, problems.** So, the house of labor has its problems—but so has the house of management. Penn Central's woes, along with those of smaller carriers in reorganization, have put "ability to pay" in a new light—a light that is sharp and clear in one way, dim and obscure in another. To this must be added continuing differences in regional outlook, and in the approaches

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that individual companies would like to see taken. Perhaps those people in the National Railway Labor Conference do not have the most thankless jobs in railroading today. But it would take some doing, to out-thankless the NRLC assignment.

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'71 OUTLOOK

Action—or politics-as-usual?

By REID BEDDOW, Washington Editor

"The power committed to Congress to govern Interstate Commerce does not require that its government should be wise, much less that it should be perfect. The power implies a broad discretion and thus permits a wide range even of mistakes." Chief Justice Charles Evans Hughes—1935.

"Mr. President, in large measure, railroading is a sick industry." Sen. Warren A. Magnuson—1970.

In large measure, whether railroading remains sickly lies in the hands of the 92nd Congress. The year 1971 could be one of the most innovative legislative years in railroad history—perhaps the most momentous since succeeding Congresses knit a transcontinental nation together a century ago by giving rails title to 131.4 million acres of western land. But beware: as Chief Justice Hughes noted 36 years ago, the railroad patient may not receive the most perfect medical attention from the legislative doctors. They are certain to offer conflicting diagnoses and plenty of verbal placebos. Faced with a hard decision between prescribing leeches—i.e., doing nothing—or prescribing antibiotics—the creation, say, of a national freight-car corporation—Congress in its wisdom may choose the leeches.

Fortunately for rails, most observers think Congress this year will move to help the industry on a scale and by methods unthinkable a few years ago. Gone are the days when the principal congressional interest for rails was passage of a bill involving attorneys' fees or an amendment to the Railroad Retirement Act.

● **The need.** In the closing days of the 91st Congress, Sen. Vance Hartke (D.-Ind.), chairman of the Surface Transportation Subcommittee, solemnly warned his colleagues, "I think it is only fair for the Senate to know that the entire transportation industry of this nation is on the verge of collapse—financial collapse—the airlines, the trucking industry, the railroads—all of them. We have a transportation crisis of major proportions on our hands, which is not being met."

The word "crisis" may seem an understatement to rail men who know that net working capital of rails is evaporating, that even in reorganization the Penn Central remains in desperate financial straits, that 42 of the 70 other Class I carriers operate at a loss, that an intractable labor situation exceeds all patience; and who know that in the cold light of the morning after the Interstate Commerce Commission seems an increasingly irrelevant figment of the bureaucratic imagination.

All of this is well understood in Washington.

"This seems to be the year that it [Congress] will have to face up to the politically painful job of changing the rules the railroads play by," notes A. Scheffer Lang, former FRA administrator and now an MIT professor.

"We must revitalize the entire national railroad system . . . specifically, we must examine the need for a national freight car pool, a railroad trust fund, design of a basic network for freight service, a program for grade crossing elimination, possible government ownership of railroad rights-of-way, and intensified research proposals for updating the efficiency and safety of the railroads," declares Sen. Winston L. Prouty (R.-Vt.), ranking minority member of the Senate Commerce Committee.

> Can a Democratic Congress and a GOP White House, in a pre-Presidential election year, agree on a rail program?

"I would hope very much that the [commerce] committee itself will look into this whole question of the contribution to the problem which the ICC is making . . . and how it has operated for years in respect of the railroads and the health of the railroads," adds Sen. Jacob Javits (R.-N.Y.).

"I cannot overemphasize the need to deal with the more basic problems confronting the entire railroad industry . . . We must squarely face the long-standing problems affecting rail transportation and look for solutions," asserts DOT Secretary John A. Volpe.

● **ASTRO.** Such comments are typical. They should lay to rest the nagging fears of many railroad officers, who so long have shouted to deaf ears, that once again they may be thought to be in the position of "crying wolf."

It can be categorically stated that at no previous time in recent years has Congress been more aware of rail needs. In part, this is due to the Penn Central bankruptcy, but it is also the result of last year being an uncommonly busy legislative year for railroads; further, in no small way, Congressional awareness of rail needs is the first payoff from the AAR's often unsung advertising and information efforts. And of course it is due to the fact that Congress has had before it for six months a whole series of programs and working papers that are, in Senate Commerce Committee Chairman Magnuson's words, the "starting points" for serious legislation-writing—namely, the industry's own ASTRO (America's Sound Transportation Review Organization) report, which is a checklist of some 30 proposals and suggestions for achieving low-cost, efficient rail transportation, as well as a blueprint for a $36-billion modernization program for rails over the next decade.

The mere existence of the ASTRO report indicates a new degree of political sophistication on the part of rails. As recently as five years ago, rails displayed a shocking degree of artlessness in dealing with the Washington power structure. Thus, in 1965, President Lyndon B. Johnson in an expansive moment at a bill-signing ceremony said to some railroad leaders, "Tell me what you want, and I'll see that you get it." Delighted with such an apparent carte blanche rails rushed to the White House a sort of mini-ASTRO program, 1965-style. Alas, it simply disappeared.

This year rails aren't going to be so gullible. Led by new AAR President Stephen Ailes, a former Secretary of the Army, and by ASTRO General Counsel George A. Smathers, the former Senator from Florida who was himself chairman of the Senate Surface Transportation Subcommittee (and who, with his college roommate, the late Philip Graham, publisher of the Washington Post, was instrumental in getting Lyndon Johnson to run with

John F. Kennedy on the 1960 Democratic ticket), will be in there slugging hard for ASTRO. A whole story in itself is the unity among railroads, suppliers, and shippers in stirring grass roots support for ASTRO. In short, rails are displaying less of a paunchy, button-down collar, rep-tie boardroom approach and more of the stance of a trim, aggressive political pugilist.

● **Pitfalls.** "There is no such thing as an ordinary year in politics," says a Senatorial aide. Thus, 1971 has its own peculiar political atmosphere. Because of it, rails must steer carefully through the bogs and mists of party politics. It so happens that Mr. Nixon is the first President since Zachary Taylor who has never once enjoyed his party's control of either House of Congress, one of those surprising anomalies our system throws up now and then. Both Mr. Nixon and the Democrats will be building records for the 1972 election. It would be disastrous if rails got caught in the cross fire. The Democrats could very well beat the "sell-out-to-big-business" drum and ignore transportation reform. Mr. Nixon, in the name of combating inflation, could very well veto rail assistance proposals exceeding his budgetary restraints.

In the 92nd Congress, therefore, don't look for too much statesman-like behavior from anyone, least of all in efforts to unravel the Gordian knot of transportation. The partisanship is sure to rival that of the 86th Congress, during President Eisenhower's final two years, and that of the 80th Congress under President Truman, to name two other pre-Presidential election Congresses.

● **The game plan.** If all goes well, railroad lobbyists hope for this sequence of events:

Jan. 21: The 92nd Congress convenes.

Jan. 22: President Nixon's State of the Union address endorses regulatory reform, improved railroad management-labor machinery, and a broad-spectrum attack on rail problems.

Jan. 25: DOT releases its long-awaited National Transportation Policy statement, which contains commitment to creation of a railroad trust fund.

February: Congress settles labor dispute. President Nixon, and DOT, send supplementary transportation message to Congress spelling out Administration legislative package, which includes an expanded loan guarantee program, prohibition of discriminatory taxation, and measures to promote acquisition of modern equipment.

President's budget message includes funding for above measures.

Numerous bills introduced embodying all proposals.

March: Hearings begin on individual bills, and separately, National Transportation Policy. Sen. Magnuson and Rep. Harley O. Staggers (D.-W. Va.), chairman of the House Commerce Committee, vow enactment of constructive railroad legislation.

April: Through October, 1972: Piecemeal enactment of individual bills.

● **Further pitfalls.** No AAR or ASTRO official, quite properly, will concede anything less than enactment of the full ASTRO package. But even men who have spent their entire lives in transportation are dazzled by ASTRO's scope. It most certainly must be the most comprehensive plan ever proposed by a single industry. Rails are trying to make up for 40 years of neglect. And naturally, there are the doubters. "Very frankly," says a lobbyist for another mode, "I'll be surprised if any of it passes. Oh, maybe another loan-guarantee bill, but that's all."

This view seems unduly pessimistic. Even taking a less than wholly sanguine view, passage of just a few of the ASTRO proposals in one form or another would constitute great success for rails. The irreducible minimum would seem to be passage of bills forbidding discriminatory taxation by states and localities, creating a national freight car corporation to acquire a pool of general-service freight cars in times of critical car shortages, providing government insurance to private lenders for $3 billion in rail equipment obligations (maritime interests have enjoyed just such insurance since 1936), and expanding the government loan guarantee program enacted by the 91st Congress from $125 million to $500 million. Added to savings realized from Railpax, this much alone would save rails about $187 million annually, plus some interest costs, and would revitalize the sagging equipment market.

Before turning to ASTRO, Congress may first have to resolve a labor crisis.

There are, however, two very discernible flies in the ointment. One is the labor mess, which has rail lobbyists and ASTRO planners on pins and needles.

The absolute first priority is a settlement of outstanding railroad labor disputes.

The Administration will request Congress to do away with parts of the Railway Labor Act of 1926 and amend the Taft-Hartley Labor Act of 1947 to give the President three options when collective bargaining breaks down.

The three options would enable the President to (1) extend Taft-Hartley's 80-day cooling off period by another 30 days in the event of a railroad strike threat—versus the 60 days now required, (2) insure partial operation of essential rail services during a strike, and most importantly (3) invoke certain highly controversial procedures which would end a dispute with a final, binding settlement.

The procedures call for both management and labor to submit "one or two final offers" to the Secretary of Labor. Five days of bargaining on these final offers would ensue. If no agreement is reached, a "final offer selector group" of three neutral members would be appointed by the disputants or, if they did not agree, by the President. This group would choose one of either party's "last, best offers" as the final, binding settlement.

Note that the final-offer selector group could choose a railroad management last offer that would contain wage increases *and* work-rule changes.

Rails, still studying the Administration bill, have taken no position on it. Traditionally, rails have felt that the Railway Labor Act itself and the National Mediation Board could be provided with stronger settlement machinery.

This whole labor issue is one huge hot potato for Congress. And however reasonable work-rule changes seem to rails, as part of a settlement, no one here is betting much on a Democratic Congress amending any labor law to suit a Republican President, or a major industry. The outlook, many say, is for Congress to pass a settlement providing wage increases exceeding the recommendations of the emergency board. In such a settlement, there is a very uncertain chance for work-rule changes. Whatever the labor outlook, in terms of other rail legislation, union support is vital and it is needed. Until there is a wage settlement, that support will not be forthcoming; labor will continue to urge nationalization of rails, a not very subtle form of arm-twisting with unforeseeable results.

● **Pandora's box?** The second worry is the kind of hearings Congress will hold on any railroad legislation. If the hearings are part of a broader examination of all U. S. transportation needs, the legislative mill could grind very slowly indeed. By the time each and every mode and the shippers and the customers and all of the myriad modal affiliates and the regulators have spoken their pieces and enumerated their respective ills, the 21st Century would be appreciably nearer. "Please don't let them open that Pandora's box," must be every rail lobbyist's prayer.

What gives substance to the worry is

(Continued on page 66)

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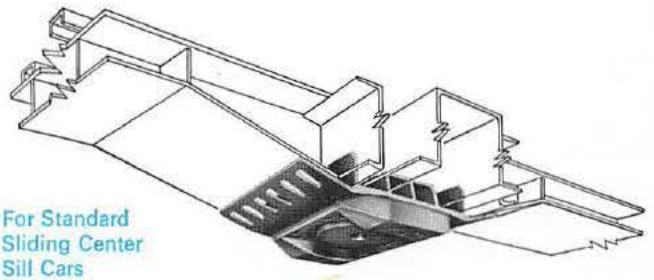

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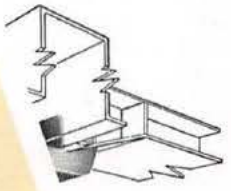

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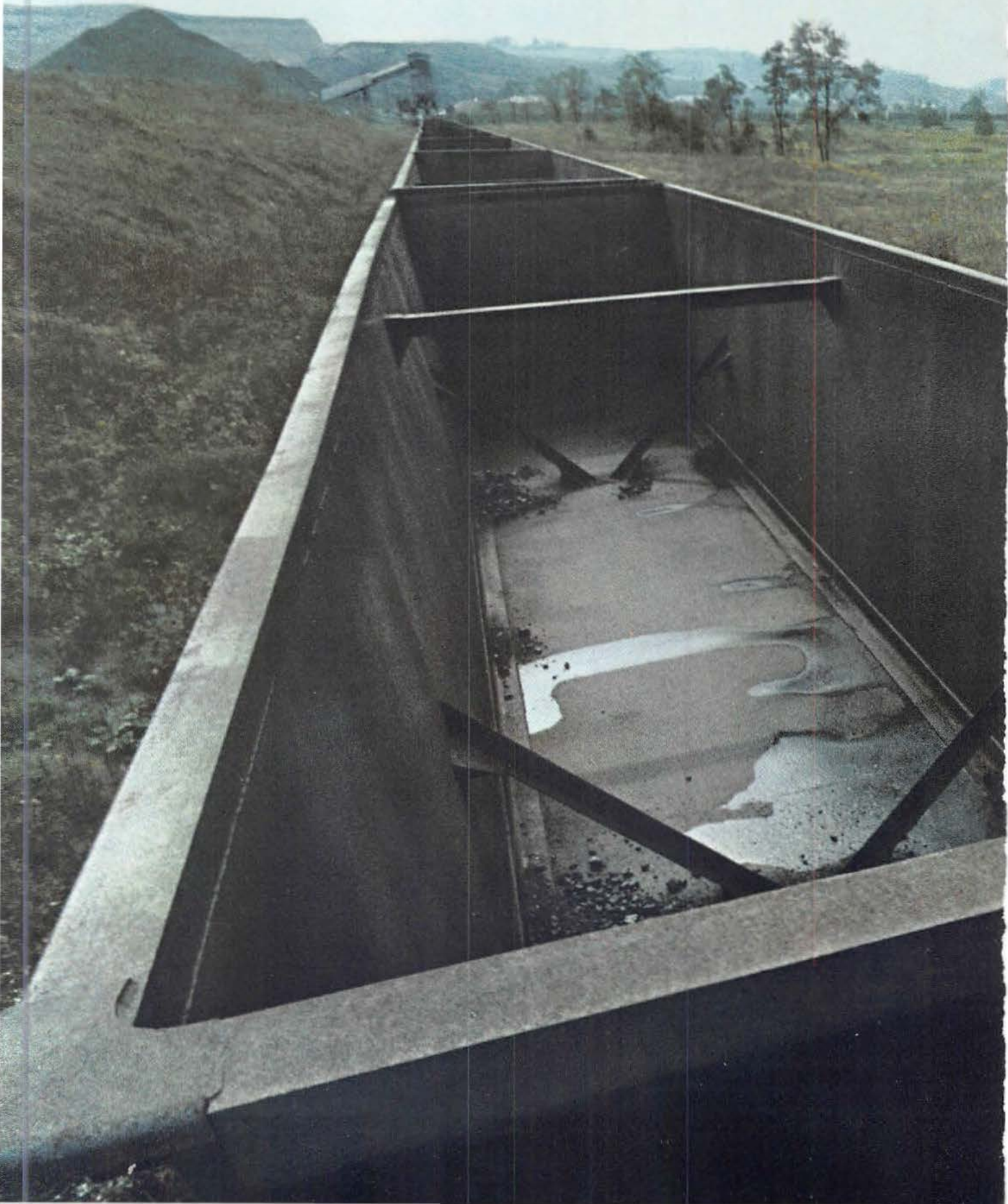

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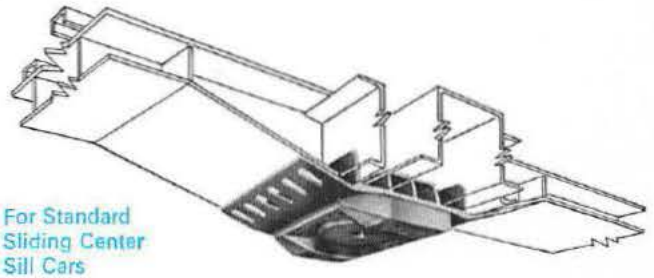

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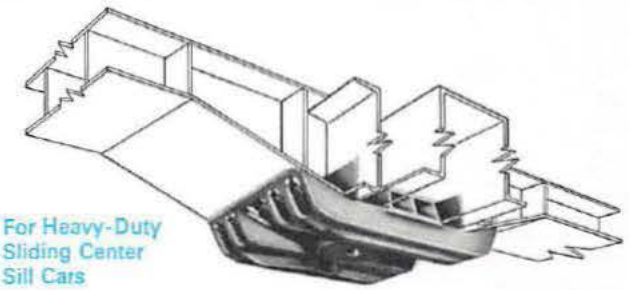

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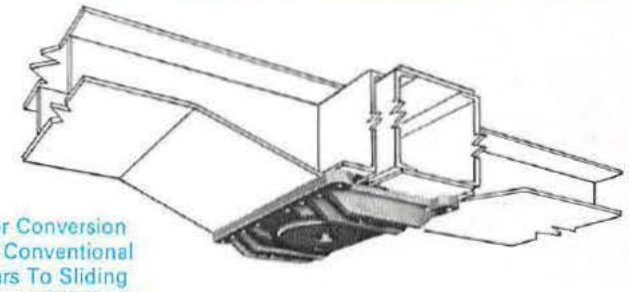

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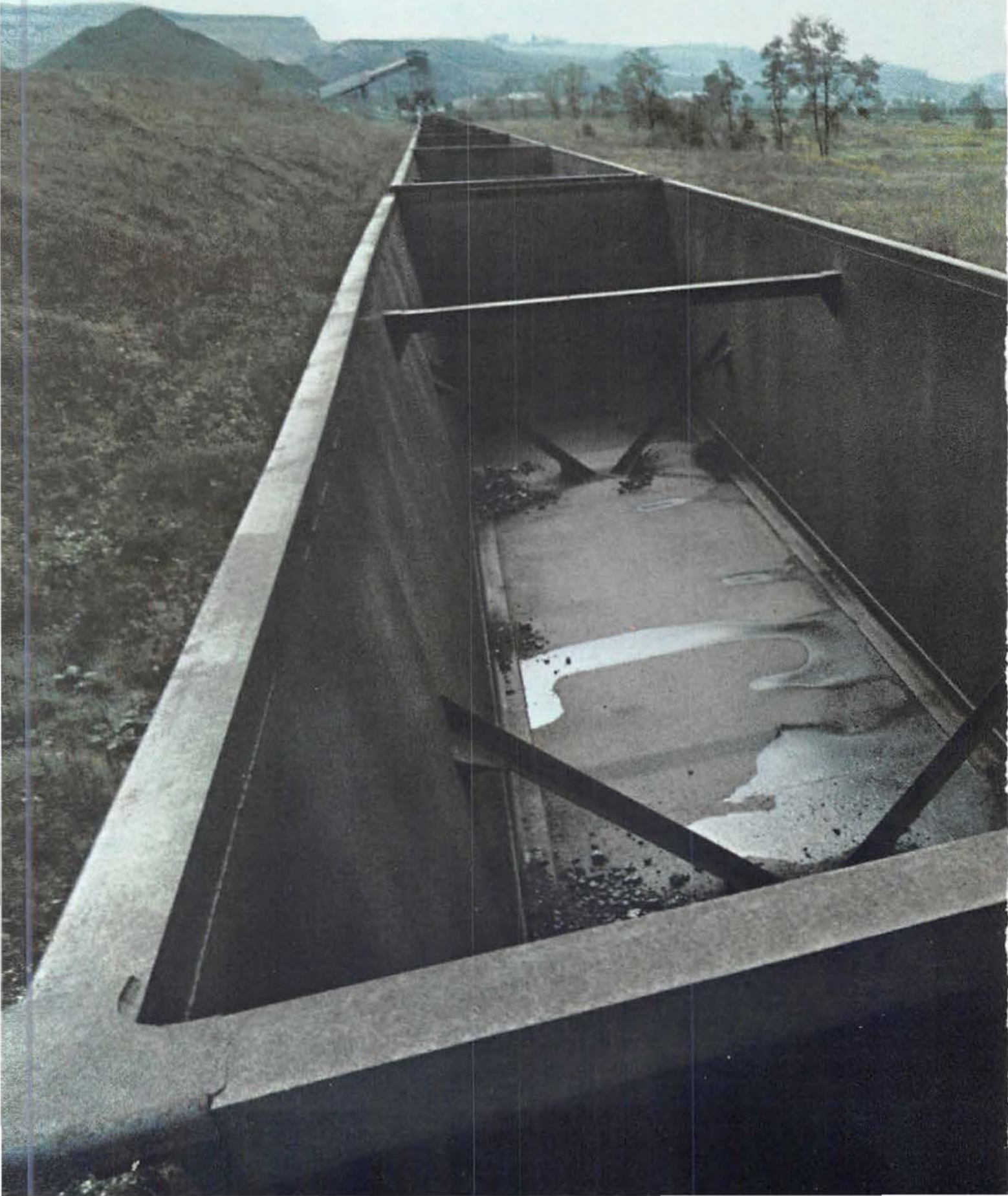
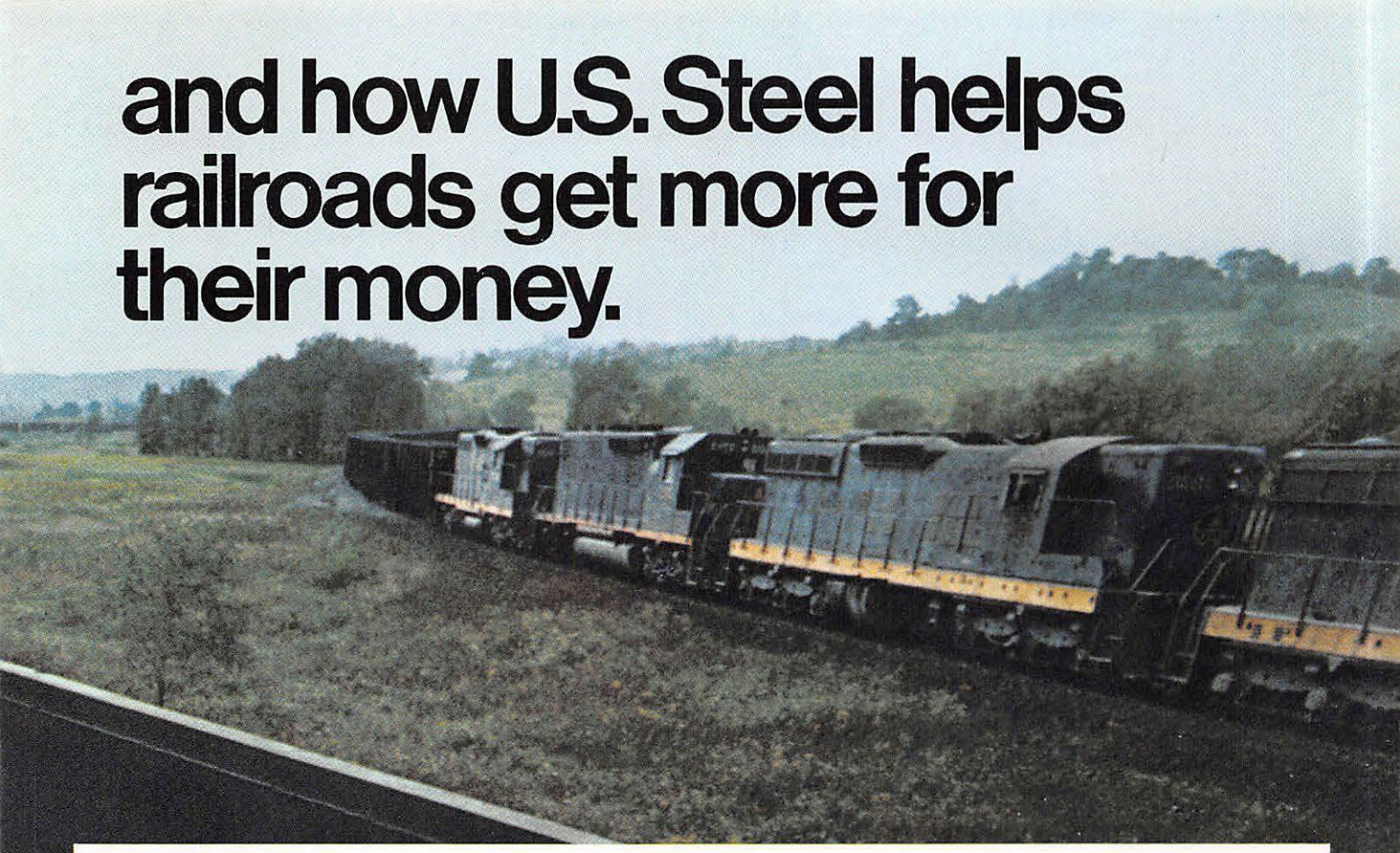


and how U.S. Steel helps railroads get more for their money.



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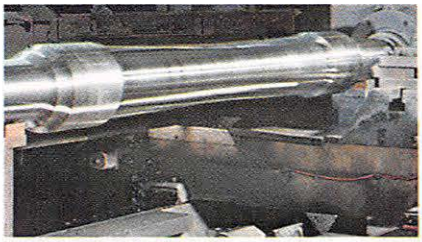

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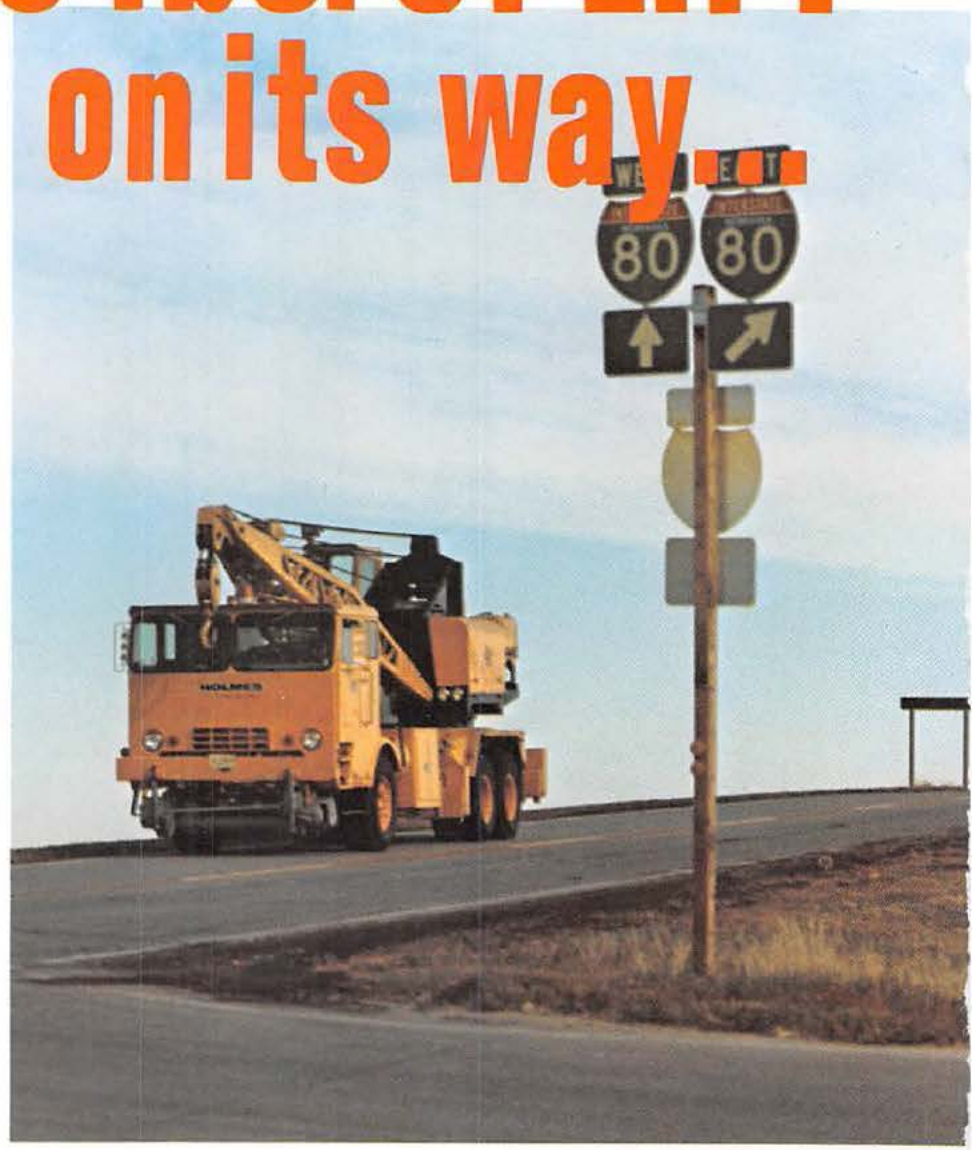

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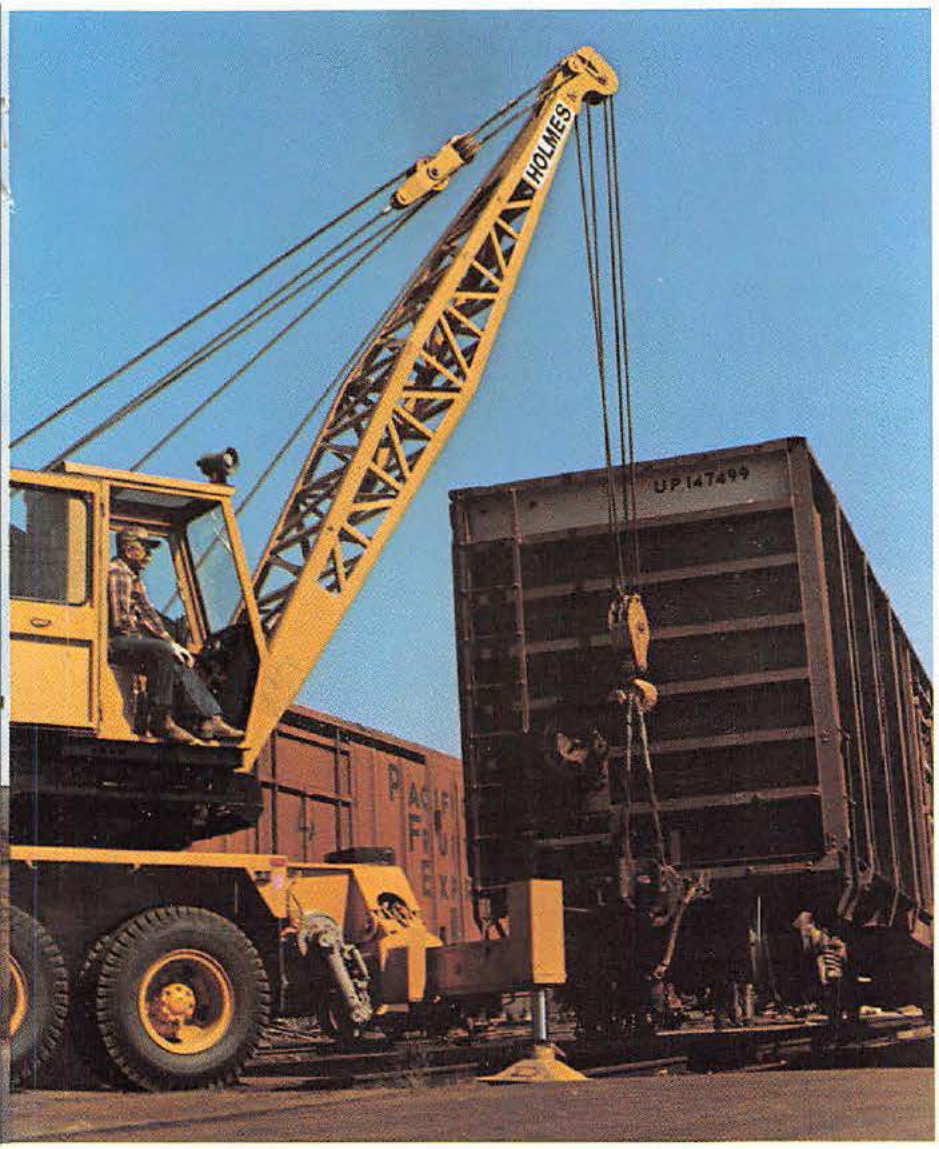

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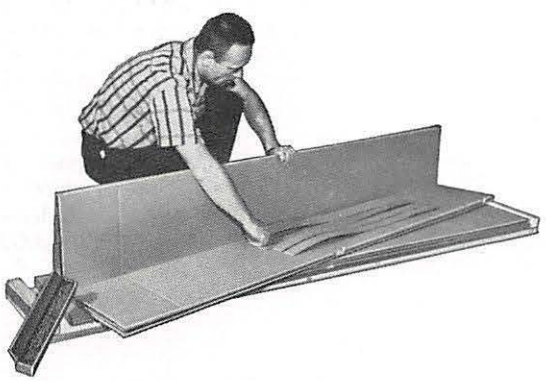

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TRAFFIC

Q. Secretary Volpe, what role does the Department of Transportation foresee for railroads 10 years from now? Where will railroads fit into the over-all transportation picture?

A. Many obituaries have been written about the railroads of late, but they are, to say the least, premature. Current ailments can be cured and the railroads will continue to be by far the largest single mover of intercity freight. In fact, we estimate that by 1980, the railroads will be carrying between 1 and 1.3 trillion ton-miles of freight, or roughly 50% more than they are moving today. The railroads' share of the expected freight total of 2,500 to 3,250 billion ton-miles will be around 40%.

There is considerable room for growth, however, and technological advancement is the key.

The most exciting development in recent years for freight is the use of containers. There has already been a phenomenal growth from its beginnings in the mid-1950s with 270,000 trailers handled to 2.2 million in 1969. Some test operations of trailer- and container-on-flat-car trains have been made at speeds exceeding 100 mph. And it is entirely feasible that by utilizing the best engineered rail routes, a national network of container services could link all major markets at start-to-stop average speeds of at least 60 mph at a cost of 25 cents per 40-ft container mile.

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ROLLING STOCK

Q. Mr. Claytor, the enlarged role described by Secretary Volpe obviously will require a massive re-tooling in terms of new equipment. What do you foresee as the industry's needs?

A. Keeping abreast of the nation's steadily growing need for rail transportation will unquestionably mean that railroads must somehow acquire during the remainder of this decade large numbers of new freight cars and locomotives, not to mention many other types of equipment, such as computers, microwave, and centralized train control, that contribute to more efficient and more economical movement of trains. Probably the best and most reliable estimate of how many cars and locomotives will be required is the one arrived at by the ASTRO group and given in its report of June 30, 1970.

According to that report, the fleet of 1,438,190 cars with which railroads began the year 1970 will have to be expanded by 1980 to 1,788,000 cars, or by 24%. Allowing for both expansion and the replacement of worn-out units, it is estimated that up to 22,000 new and greater capacity locomotives will be required, as compared with present locomotive ownership of some 25,750 units.

The total cost of freight car acquisitions, including rebuilding and heavy repairs to existing cars, and locomotives, is estimated by ASTRO at just under $25 billion, which averages out to nearly $2.5 billion a year through 1980. This, it should be emphasized, does not take into account other types of equipment needs, nor does it include large expenditures which will also be required on roadway and fixed plant in that period.

ROADWAY

Q. It has often been said that railroads cannot operate tomorrow's equipment on yesterday's track. What do you see as the industry's needs in terms of improved roadway and maintenance-of-way practices, Mr. Rice?

A. In the decade of the 70's, improvement to roadway and in maintenance of way practices must follow a two-part course. First, there is serious need to undo damage resulting from the industry's depressed rate of return during the past decade. Equally urgent is the need to effect major improvements in route, fixed facilities and materials.

Rail and tie replacements must be raised from the 1966-1968 level of approximately $270,000,000 annually to approimately $530,000,000 annually for the next ten years—nearly three times the rail installation level of the past decade, and 50% more tie installations. New and relay rail replacement will cost approximately $332,000,000 a year at present prices, while tie replacement will approximate $197,000,000 a year. At the same time, there is need for basic research in rail to improve both its carrying capacity and its wear characteristics. Steel mill practice and plant require improvement to produce a better product. Recent timber market fluctations stress the continuing need to develop satisfactory alternatives for the timber crosstie.

Bridge replacement, including in some cases improvement to alignment at stream crossings, is a major need for the next decade. A number of major bridge structures installed between 1900-1920 are nearing the end of their expected service life. These structures, many designed for Coopers E-50 or lower loading, will not be capable of handling the loads and speeds required in the 70's.

Major improvements in yards and terminals are necessary. This includes upgrading of present facilities; modification, and in some cases, automation, of existing terminals; and construction of additional major classification facilities, a need intensified by the introduction of run-through trains involving several railroads.

Route improvement is a major need, including improved signaling and installation of centralized traffic control on additional segments of line. It also includes major improvements on new routes available through consolidation and merger which presently handle light traffic. Improved alignment and grade on many existing routes will permit substantial improvement in both schedule and impact factors.

Increased rail replacement and tie insertions will call for increased purchases of maintenance of way equipment. There is a continuing need for improvement and innovation in such equipment, not only as to function, but also as to manning and maintenance cost.

The 70's will be a decade of challenge for America's railroads, but given prompt and favorable Congressional action on the ASTRO proposals, the industry will strengthen itself to meet in full measure the nation's ever increasing transportation requirements.

FINANCING IMPROVEMENTS

Q. Mr. Barnett, how will railroads raise the money required for the kind of improvements described by Mr. Claytor and Mr. Rice?

A. The 1970-1980 requirement stated by ASTRO as $36.3 billion is principally based on present technology, but may be taken as a fair estimate of the minimum requirement. This money can and will be raised largely by the industry itself, if:

(1) The Astro recommendations as to government guaranteed loans for right-of-way and equipment modernization are adopted. When compared to the $229 billion governmental expenditure in support of competing forms of transportation in the last 15 years, a government guarantee of the amount required for the railroads is not significant in the national fiscal sense. The money would be used in the production of low cost transportation which in itself is a prime social necessity.

(2) Meantime, emergency support will be required for the Penn Central which, at least in some measure, has been reduced to its present state by governmental regulation itself.

(3) The railroad industry needs and must have equality of treatment by government with other modes of transportation.

(4) The railroad industry needs and must have freedom from punitive government regulation so that urgently needed steps may be taken to rationalize the heretofore irrational maintenance of an outmoded system, again largely required by government itself. The basic strength of the industry has been amply demonstrated by its ability to survive at all under a governmental policy which seems almost deliberately designed to destroy by bureaucracy.

(5) In the process of rehabilitation, both management and labor must, and will, go through a painful process of self-appraisal and unite in both a short and long-range program to demonstrate to the shipping public and to the world that the U.S. railroad industry is in fact a growth industry without parallel.

This is the program under which the railroad industry will raise, and itself repay, its own relatively small capital requirements during the period 1970-1980.

TECHNOLOGY

Q. Mr. Biaggini, Secretary Volpe commented on technology as the key to advancement. Do you anticipate substantial progress in this area?

A. We must make substantial progress in railroad technology in the coming decade and greatly heighten research and development efforts, if the railroads are to meet the growing public need for freight service (in SP territory alone we expect a doubling of transportation demand by 1985) and improved productivity enough to be a healthy industry.

The industry itself has a huge potential for technical research, now often untapped or lacking focus. There will be more cooperative effort between individual railroads, the AAR, suppliers, and the Department of Transportation. We cannot afford the wasteful luxury

of piecemeal research on single components.

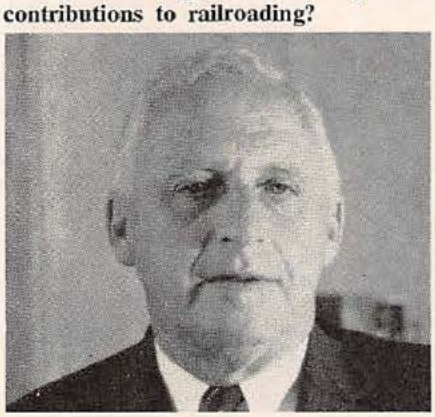
So railroad R&D will be aimed more purposefully in total system approaches to major, overall problems. We will have, for example, fundamental total systems studies of train dynamics, investigating the inter-relationship between track, vehicle and train handling. These should lead to significant innovation. We'll certainly know a lot more in the next 10 years about new propulsion systems and track design. In our capital-hungry industry, how far we can move in these directions depends upon our priority list for where we can do the most with limited money.

Specifically, though, I look forward in the next 10 years to important advances in the freight-car truck, automatic coupling, grade crossing protection, yard and terminal design, computer-aided dispatching, surveillance and signal systems, data exchange through the industry, intermodal containers, environmental controls, use of new materials, and product reliability to reduce maintenance costs and avoid service interruptions.

I look forward to more R&D interface with new technological advances in other fields here and abroad, more use of simulation and mathematical models as we expand research and engineering uses of the computer, and more frequent closely-coordinated efforts with shippers along technical lines, to design new equipment and services, cut costs and develop new markets.

THE COMPUTER'S ROLE

Q. Mr. Perlman, where can computer science/technology make its greatest contributions to railroading?



A. It would appear to me that one of the most important functions is the obtaining of accurate unit and product costs. Better unit costing can lead to greater efficiency in operations, and product costs can be of immense aid in pricing and market research.

Three other "great contribution" roles for computer science/technology would be:

— In the field of command and control equipment, which can lead to greater automation in our operations.

— In the field of market research, where many of the now-imponderable variables can be equated in the computer to obtain better solutions to our marketing problems.

— In the field of the total management system concept, where one memory core can furnish uniform, detailed and expedited management information at all levels of supervision as deemed necessary, which can lead to more intelligent and more timely management decisions.

MARKETING

Q. Mr. Grayson, how can railroads most effectively strengthen their marketing/sales efforts during the 1970s? What needs to be done to more closely coordinate operations with marketing/sales? And what might be done to develop more professionalism in marketing/sales work?

A. The railroad industry has been exposed to the marketing concept for the past decade. It has come to realize the importance of this doctrine to the business world and has made attempts to adopt its principles. The industry must be willing to commit and dedicate itself to this proven way of conducting business if future success is to be achieved.

The next decade will produce many problems in the United States, such as agricultural marketing, congestion, foreign commerce, housing and waste disposal, and so forth. These problem areas will present the railroads with many opportunities. Marketing—which is concerned with defining profit opportunities, designing a saleable product, promoting the sale of the service, and monitoring the results for corrective purposes—will be needed.

Organizational and functional changes will be necessary, in addition to commitment, if railroad marketing is to succeed. Profit responsibility centers must be established at levels where marketing can influence basic operating decisions. Sales departments should be structured to deal with large complex corporations and to recognize the functions of sales service, as well as selling. Finally, the marketing function must be able to readily determine the quality of the intra- and inter-company service being produced.

SERVICE RELIABILITY

Q. What moves can railroads make, Mr. Jenks, individually and in conjunction with connecting lines, to improve service reliability and equipment utilization? What improvements are needed in terminal operations, or in the physical layout of terminals, to eliminate present bottlenecks?

A. Providing reliable service to the shipper is the paramount goal of a railroad—and one of the big barriers blocking full achievement of that goal is terminal congestion.

First, most of the yards now in operation were designed 50 years or more ago. They are not adequate to handle today's traffic smoothly, let alone the increased traffic of the future. It is time to come up with new yard designs, to improve on the best of what we have today. Using the computer technology now at our disposal, we could accurately simulate operation of new yard designs.

Second, communications among the railroads must be improved. All railroads should be exchanging information about car movements, using standard and compatible communications systems. We have found that terminal performance improves dramatically when accurate information is received early enough to plan operations.

Third, a good deal of inefficiency is the result of antiquated work rules both in road and terminal operations. It would be in the best interests of both labor and management to work out new agreements on such things as preblocking, interchanges, distinctions between yard crew and road crew work and salary based on mileage. Terminal congestion is part of the problem. But a great deal of terminal delay is caused by freight piling up because there is no economic way under present work rules to run more frequent schedules.

SPEED ISN'T ENOUGH

Q. Mr. Fishwick, short of actual merger, what cooperative arrangements can railroads make to improve service to customers? How effective, and how far-reaching, will pre-blocking and run-through techniques be in contributing to service improvements?

A. The cornerstone of improved customer service lies in cooperation among the railroads and between shippers and the carriers. Certainly, new equipment is needed in substantial quantities to move growing volumes of traffic. Roadbeds, track, in fact the industry's entire physical plant, must be upgraded in general.

But the real money for railroads is in moving freight cars, and moving them quickly, efficiently and continuously. As our industry's performance advances in this respect, service to shippers will improve accordingly, with a corresponding increase in our financial health.

Shippers are primarily interested in dependable transportation service with predictable transit times between origin and destination points. Speed is important, but of much greater importance is a steady, even flow of traffic and dependable arrival times. We need to match the dependable performance supplied by other forms of transportation.

Railroad performance has too often been measured in terms of long, heavy trains or in terms of the speeds achieved by scheduled trains between railroad terminals. We should be more concerned with a steady and even flow of cars of traffic between major originating and terminating points. We should use our computers not so much to determine where cars are at any given moment, although that is important, but rather to determine how smoothly and reliably cars are moving between major traffic points. We now have the tools to perform this monitoring function and to pinpoint the causes of traffic delays, whether they be missed connections or terminal congestion. When we know what is wrong we can take corrective action either in the form of run-through trains and pre-blocking, or in the form of more effective yard and terminal performance. The critical point, either in the performance of a single railroad or in cooperative action among connecting railroads, is that the guiding objective must be a steady and smooth flow of traffic. Both train and yard operations must be conducted with the primary purpose of accomplishing this objective. This means that traditional measurements of train and yard performance must be replaced with a new standard of service performance.

TOMORROW'S MANAGERS

Q. What can railroads do, Mr. Reed, to insure top-quality in tomorrow's management—in recruiting, training and retraining the men who will be in charge in 1980 and thereafter? What kind of comprehensive training can be developed for both operating and non-operating employees to improve their capabilities and to allow them (and the railroads) to gain maximum benefits from their abilities?

A. The acquisition and development of our human resources will continue to be a major challenge for the industry in the 1970s. Some of the steps which must be taken to meet the challenge are fairly obvious.

We must maintain an active liaison with the educational institutions that are training the nation's future leaders and we must actively recruit from this source. Attention should also be given to facilitating inter-industry transfers by management people who may decide that they wish to switch from their present profession to a career in transportation. For this effort to be successful, we must offer both the salaries and the challenging responsibilities that young men and women can find in the professions, in other industries, and in government service.

Seeking and recruiting superior talent is a necessary effort, but it is a useless one unless we can provide an atmosphere in which the talent can exercise itself and grow. While a large part of the task of achieving an innovative, creative environment within our industry will be focused on relief from the regulatory constraints which now restrict our ability to change, there is much each railroad can do internally to foster an atmosphere in which our managers are constantly searching for new solutions to our problems—including a continuing management education program designed to keep our managers abreast of the latest technical and business techniques; personnel exchanges with user-industries and government agencies; cross-department transfers aimed at eliminating a narrow, departmentalized approach to our business; and, above all, a corporate structure which provides a fair hearing for new ideas. These are a few of the ways in which we can strive for the creative environment that encourages the recognition of ability throughout the organization.

In the same regard, our non-managerial employees must be given every opportunity to develop their skills and abilities through more concentrated and continuing training. Videotape training courses, programmed instruction and computerized simulation of actual equipment hold great promise as training tools in this area.

LABOR'S ROLE

Q. Mr. Boyd, what can rail management do, working with the labor organizations, to promote and produce a climate of cooperation and singleness of purpose? What change in existing legislation might further encourage settlement of disputes and minimize the disruption caused by strikes and strike threats?

A. On the Illinois Central we have been working with the United Transportation Union through a joint program called the JOBS commission to create just such a climate of cooperation. The Commission, comprised of four union officers and four management men, is searching for ways to change the way work is accomplished on the railroad in order to create new business for the railroad and new jobs for railroad employees. We have every hope that JOBS will succeed and, in

turn, may act as a catalyst for change in the railroad industry.

At the national level, the Railway Labor Act, which for years worked well to implement collective bargaining, is not working today. Changing conditions over the past 35 years have made it necessary for that Act to be updated. We want those changes to be made with one prime purpose in mind: To create an atmosphere that will be conducive to the settlement of collective bargaining matters through actual collective bargaining—not economic warfare. Any changes in the law should be made to add incentive to both labor and management to reach agreements without the necessity of resorting to government intervention. But we must have machinery to settle differences among reasonable men.

MERGERS

Q. Mr. Budd, what, in your view, will —or should—the ultimate U.S. railroad system look like? Three companies, a half dozen, a dozen, or something more like the 70-plus Class I roads of today? What criteria should be the key ones in determining whether mergers should be approved, or even proposed in the first place?

A. The over-capacity of the nation's railroad plant is testimony to the fact that it needs to be reduced in size in the years immediately ahead. Additionally, the high cost of borrowed money, spiraling wages and the inability of the industry to obtain necessary employee productivity all combine to insure that there will be fewer U.S. railroads in both the near- and long-term future.

Companies will be brought together by the need for greater savings and revenues. Together, these will help bring about improvements in efficiency and service needed to attract new business to the line.

In some instances, the absorption of only a part or parts of one railroad by another may be preferable, for some carrier properties obviously have outlived their economic usefulness and high fixed debts make them unattractive as an acquisition or as a merger partner.

Whether mergers of the future will be of the parallel or end-to-end type will depend upon the unique set of circumstances involved, for each is different. Parallel mergers, however, are being made less attracive because of costly and time-consuming procedures required to abandon or consolidate duplicating lines and facilities.

The national rail network of 1980 hopefully will comprise high-speed, high-capacity lines linking major population centers with sources of raw materials and manufactures, and will include an adequate system of strategic feeder lines. Such a balanced and healthy system, however, will be possible only if economic rationality governs future regulatory decisions affecting the industry.

PASSENGER TRAINS

Q. Mr. Moore, where, in your view, will the passenger train fit into the 1980 picture?

A. By 1980 the National Rail Passenger Service Corporation will have gained almost a decade of experience in developing rail passenger service "justified on the basis of public demand" and in balance with air and highway transportation.

The Corporation will have enjoyed opportunities never before available to individual railroad companies. It will be operating under freedom from control of the Interstate Commerce Commission on regulation of rates, abandonment or extension of lines utilized, regulation of routes and service, and the discontinuance or change of passenger train operations.

Under such favorable conditions, the service could possibly be operating with minimal losses. Today's passenger-carrying railroads will be performing service under contracts with the Corporation.

It is anticipated that by 1980 Metroliner-type operations will have been extended to other high-density travel corridors in the nation by the National Rail Passenger Service Corporation. High-speed trains have great capabilities for helping alleviate the burden on other modes of transportation. They are destined to become an essential part of balanced intercity travel systems in the 70's and beyond.

Rail commuter operations, now recognized as an indispensable public service in metropolitan areas, will have become the sole responsibility of public agencies. These agencies either will own the commuter systems outright or will be paying all deficits incurred by private operators.

PLANT LOCATION

Q. Mr. DeVine, what can, and should, railroads do in the coming decade to attract new industries in their lines? Are present industrial development programs adequate?

A. The railroads have filled a leading role in the industrial development field over the past several decades. The capital expenditures made by the rails to acquire land for industrial development purposes have been unsurpassed by any other transportation entity. In fact, none of the other modes maintains anything that even remotely resembles a thorough-going railroad industrial development department.

So, I think you can say, yes, our programs are altogether adequate.

As to "What can, and should, railroads do in the coming decade to attract new industries," I don't think we can continue to approach industrial development along traditional lines much longer. By that I mean I don't think many railroads will have the means to make the huge investments in land acquisition and development that they have made in the past. For one thing, there are just too many demands being made on our cash and credit for new equipment, maintenance and services to permit future large scale land investments. And, of course, it takes several years to develop and market industrial property.

Industrial development as the "new business" arm of the railroad industry performs an extremely vital function. We feel that the railroads will continue to grow and expand in the coming

decade and we simply can't do it without a well organized industrial development department.

Of course, there may be changes in our approach. The communities we serve are becoming increasingly aware of the fact that they will have to assist the private sector in the area of land investment and development, while protecting present land reserves through proper zoning.

On C&O/B&O our I.D. people work very closely with our sales and marketing personnel, promoting site selection, especially from a distribution point of view.

We're extremely optimistic concerning the future of our plant site location effort.

NEEDED: A PARTNERSHIP

Q. Senator Smathers, the foregoing discussion suggests the need for the kind of railroad-government partnership proposed by ASTRO. Do you believe that this partnership will, in fact, come to pass?

A. I think a strong railroad-government partnership will be achieved—because it must be achieved. The alternatives are unacceptable.

Railroads are an essential part of an essential industry. They cannot be permitted to deteriorate. They must be strengthened.

Government already has a strong financial commitment to transportation —though not, as yet, to railroads. Extending this commitment to include them is not only a logical expectation but an absolute necessity.

On the regulatory front, government has long been involved in railroad affairs. So the beginnings of a partnership already exist. The challenge now is to make this partnership a fair and constructive one.

The report of America's Sound Transportation Review Organization (ASTRO) sets forth a thoughtful, practical blueprint for just a partnership. In fact, what the report calls for is "creative Federal involvement."

It comes clear to anyone reading the ASTRO report that the real need is for a change in attitude—a new way of thinking about America's transportation.

The ASTRO message is that America needs all its transportation modes—and needs them all strong. Old prejudices must be dropped. Long-standing inequities must be redressed. All modes most be placed on an equal footing, so each can do the job it's best suited to do.

In all of this, government must help, not hinder. That's an important element in any good partnership.

Railroads don't demand this change in attitude. Railroads don't demand government action to restore financial vitality drained away through decades of outmoded regulation and subsidized competition. Railroads only point out the need for these things. The public interest demands them.

Because of this, I believe they will come to pass. I believe that government will embrace the concept of creative involvement. And the result will be the kind of railroad system our nation must have. ■

Europe's railroads look to a busy decade

Western Europe's nationalized railways will be mounting a "full-fledged attack on area-wide problems of transportation congestion" during the '70s, says the International Union of Railways (UIC), headquartered in Paris.

"The comprehensive program of continual rail service improvement is already doing a great deal to reduce traffic congestion at many airports and along Europe's elaborate highway system," says a UIC statement released in New York. "It is already permitting the railroads to more than hold their own in attracting travelers. Latest UIC statistics show an increase of about 5% across the board in passenger traffic for the first part of 1970 over 1969."

"All forms of rail transit are involved—passenger and freight," says UIC. "Included are rapid growth in high-speed Europe-wide express trains for both passengers and cargo, the development of efficient diesel and electric traction, an elaboration of carrying train services, plans for a $700-million Channel Tunnel connection between the Continent and the United Kingdom, development of intermodal traffic, a rail freight car pool, a vigorous research and development program, and an increasing use of automation and uniform operating practice among the countries of both Western and Eastern Europe."

UIC describes these recent moves:

—Addition of a new Trans-Europ Express train, bringing the TEE network of 80-125-mph passenger trains connecting 100 major cities to 29.

— Introduction of five special "Kombi-Trains" in Germany which move piggyback trailers on twice-nightly schedules between Cologne and Stuttgart. On Sept. 8 this year, the German Federal Railroad will begin operating a fleet of high-speed trains on four routes linking 31 large towns with service every two hours on weekdays.

— Beefing up of British Rail's high-speed intercity service, which runs 17,000 passenger trains a day and has cut heavily into air and auto travel for business and pleasure trips within a 250-mile range.

— Introduction by Italy of "Super Rapido" service between Rome and Milan for a 5½-hour trip. The route will be straightened by 1975 so that the first half of this journey can be made to Florence in less than 1½ hours. In addition, 160-mph trains are planned between Milan and Naples.

— Moves by UIC to introduce a Europe-wide centralized management of railway freight traffic, employing a uniform numerical coding system.

— The decision by two commercial freight subsidiaries of European railways, "Intercontainer" and "Interfrigo," to guarantee transit times over many international routes.

UIC points out that the success of Europe's railways in decongesting airlines has been attested to by the Institute of Air Transport (ITA).

ITA notes that "despite the use of tracks which are old and ill-adapted, high-speed trains have often successfully resisted competition from the aircraft on routes such as London-Manchester (190) miles and Paris-Brussels (200 miles), or others under 500 miles served by Trans-Europ Express trains. More than half at least of the 450 longest European routes are of less than 500 miles." ■

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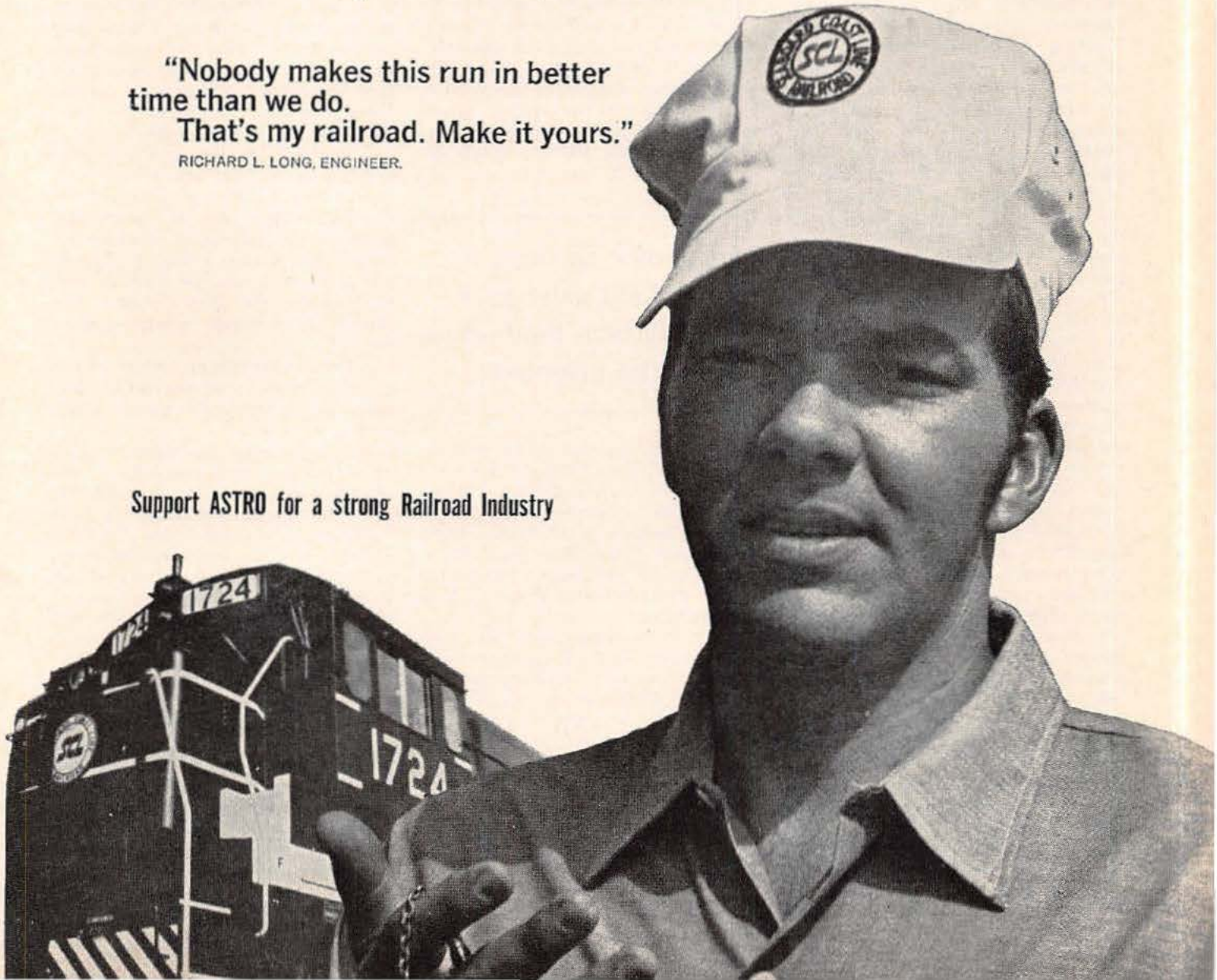


Support ASTRO for a strong Railroad Industry

VOLPE: LOAN GUARANTEES ALONE ARE NOT ENOUGH

(Continued from page 50)

that Senate Commerce Committee Chairman Magnuson and his lieutenant, Sen. Hartke, intended to reintroduce legislation to study a national transportation policy. Introduced with great fanfare in 1969, the earlier study was allowed to fade away.

Sen. Magnuson's bill would require a regional determination of transportation needs and resources and development of a study based on regional requirements. Sen. Hartke speaks of the "necessity of going in depth into this whole question," including a study of rail nationalization, mergers, and the acquisition of non-railroad properties.

The prospect here, then, is one of headaches for rails. Almost certainly, however, such National Transportation Policy hearings would be held separately from those on specific ASTRO proposals, with the possible exception of deregulation proposals. Rails can relax somewhat on this one.

● **Opposition.** The word leaked around Washington in advance of the 1971 legislative policy meeting of the executive committee of American Trucking Associations that the motor carriers would not press for their cherished and unpopular increase in truck size and weights this year. Instead, it was reported, they would adopt a defensive position, ready to battle all out against any threat to the independence of the ICC, or what the truckers, in their customary, vivid public style call the "shadow" of "radical" changes in regulation. This means most certainly that ATA will be casting a baleful eye towards all rail legislation, ready to pounce on any deregulation proposals or a threat to the Highway Trust Fund.

In his year-end statement, ATA President William A. Bresnahan claimed NIT League support for maintaining an independent ICC. His statement was curious in that it mentioned rails almost as often as trucks and sought to link Penn Central's former management with the proponents of a merger of the ICC, CAB, and FMC, a view which should interest Sen. Howard Baker (R.-Tenn.), the able and courteous member of the Senate Commerce Committee who has proposed a full study of just such a merger. Whatever ATA's attitude towards ASTRO—and it presumably will be a negative, Hatfield-and-McCoy one—the inescapable conclusion from an examination of recent speeches and public statements of ATA officers is that, for the motor carriers, if rails did not exist as a whipping boy, they would have to be invented. The truckers have had a bad economic year, too; ATA has suffered the loss of several key managers of its state trucking associations; the trucking industry's public image has suffered over the size and weight issue and the Administration will again seek higher highway user taxes.

For internal political reasons, the chance to take off after their hereditary enemies, the railroads, may prove too tempting for the motor carriers.

The National Association of Regulatory Utility Commissioners similarly will stand by ICC, opposing its abolishment, transfer of its functions to DOT, or its consolidation with the air and maritime regulatory agencies. Indeed, NARUC plans to seek congressional authority to strengthen state regulatory commissions. It wants an amendment to the Transportation Act of 1958 which would prohibit ICC action in an intrastate rail rate case unless a railroad's pettion for relief had been denied by a state commission or that a state commission had failed to act upon a petition after 120 days.

● **The ICC.** The ICC is sure to be the focus of continuing attention in the coming year. It is well known that rails favor drastic changes in the regulatory system, the only mode to do so. But even rails are surprised at the mood in Congress that ICC has outlived its usefulness. This can be documented in lots of ways. On Dec. 30, in a Senate debate on the rail loan guarantee bill,

> "For motor carriers, if rails did not exist as a whipping boy, they would have to be invented"

Sen. Hartke, replying to a question from Sen. William Fulbright (D.-Ark.), had this to say about the ICC: "If the Senator can tell me what the ICC is studying, he has a mind which comprehends things I have never been able to comprehend. I have been trying to find out for two years now what they have been studying."

Later, in the same debate, Sen. John O. Pastore, (D.-R.I.), another Commerce Committee member, declared "The Penn Central merger was a victim of the ICC." And Sen. Marlow Cook (R.-Ky.), still another commerce member, agreed: "Truly, they [the Penn Central] have been a victim of denial after denial of freight rate increases . . . they have been a victim of the very system that was created to make a viable system."

Nothing in the last year has been more surprising to veteran Washington transportation observers than this readiness among Congressmen freely to criticize the ICC. "The ICC's power base has almost completely eroded," marvels one lobbyist.

Somewhat bewildered by all the fuss, after having been so long insulated from the rough and ready of politics, ICC's commissioners are beginning to rebut the critics. ICC has readied what it calls its "position paper" to justify the Commission's continued existence. It is sure to be carefully dissected by the Congressional critics.

● **A DOT promise.** DOT secretary John A. Volpe promised in November to submit comprehensive legislation early in the new Congress to aid rails. "Short infusions of cash are simply not the final answer," Volpe said. "Without some fundamental corrections within the industry and in the government's approach to the industry, a loan guarantee program may do no more than keep false hopes alive."

No one at DOT has divulged any of the forthcoming proposals, which may indicate some high-level dissension about their nature, but here again there have been strong hints of some deregulation.

DOT support seems certain for:

—Removal of state and local discriminatory taxation and a review of the tax laws for other inequities.

—Improving railroad operational efficiency with respect to utilization of freight cars, modernization of facilities and improving track and roadway, and rationalizing the total plant. The "How" of this should be most interesting.

—Exploration of other areas of rail operation where new concepts or new technology might lead to greater efficiencies.

It is noteworthy that through all of 1970's rail economic troubles, no criticism was ever made by rails of DOT or FRA. "They're just great," says an AAR officer. No one doubts that FRA agonizes over rail problems and longs to help solve them. Given the lead and authority from the White House and its pinch-penny Office of Management and Budget, DOT and FRA, agrees everyone, could swiftly move on many fronts. Unfortunately for rails, DOT Secretary Volpe and his rail aides are shackled by Administration loatheness to embark on new areas of even modest government spending. And some say the Administration in some already approved programs, like mass transit assistance, is talking big while releasing only the smallest possible amount of cash flow. ■

THE THREE "R's" OF '70

Recession, reorganization—and a hope of revitalization

For the railroad industry—and for a nation that depends upon it—1970 was one long "moment of truth."

What hapened to railroads in 1970 was, to some, almost unbelievable. But, it happened. And the "happening," hopefully, was a sobering experience for all those whose efforts must be bent toward setting things straight.

Railroads wound up 1970 with results that more resembled the Depression '30s than the Soaring '60s or the (presumably) Sizzling '70s. They wound up with four of their number in reorganization under the bankruptcy laws. They wound up with the biggest of all roads, Penn Central, under court protection but still faced with the possibility of financial disaster. They wound up, too, with an internally-generated positive program for improvement—ASTRO—but it was a program that would necessarily depend largely upon the actions of others to effect the proposed improvements.

For its part, government dealt with railroads in 1970 in both a plus and a minus way. Congress enacted legislation which will take the passenger deficit off the industry's back. Congress rammed through a loan-guarantee bill for railroads in reorganization. Congress also bowed low in the direction of urban mass transportation improvement and high-speed ground transportation research. And Congress at least looked at proposals for helping improve freight-car supply. At the same time, the lawmakers enacted a railroad safety bill, the impact of which is yet to be assessed. And, faced with a nationwide rail strike in December, Congress took the unprecedented step of ordering a wage increase recommended by an emergency board—while it ignored compensating work-rules reform which the board had also recommended.

Congress took no action whatsoever on an Administration proposal for change in rail labor law. And it had no time for finishing up proposed reforms which would prohibit state and local tax discrimination against railroads and their property.

Considering conditions, railroads generally did an outstanding job in 1970 of maintaining and improving equipment and fixed plant. Capital spending was down, but not by as much as might have been predicted. Operational improvements were substantial, as railroads expanded unit-train operations and inter-road pre-blocking. With the help of improved communications and computer systems, transportation quality control became a more exact science.

There was one big merger—Burlington Northern—and there were a couple of others which made progress toward consummation. There were freight-rate increases, without which the industry would have gone a lot broker than it did. And there was ASTRO—the report of America's Sound Transportation Review Organization.

ASTRO encompases so many proposals that it's hard to know where to start. But its key pleas are for equality in treatment, and for "creative Federal involvement." A few of its proposals have already been acted upon or considered in Congress; more of its proposals will go before Congress in 1971, and what happens then is anybody's guess. But the groundwork has been laid, in 1970. The priorities will, in large part, establish themselves. Action, hopefully, will follow.

Financial results

Outgoing AAR President Thomas M. Goodfellow may have made the understatement of 1970, where railroads are concerned: "Certainly 1970 wasn't a good year for the railroads."

Railroads did take in more money in 1970, with total operating revenues of about $12 billion compared with $11.4 billion in 1969, despite declines in carloadings and in ton-miles generated.

With expenses also on the increase, however, net railway operating income dropped from $655 million in '69 to less than $500 million. And net ordinary income (when final figures are in) was expected to be about half of the $514 million reported for 1969. You have to go back a long way to find a lower figure—back even farther than 1961, when net totaled $382 million.

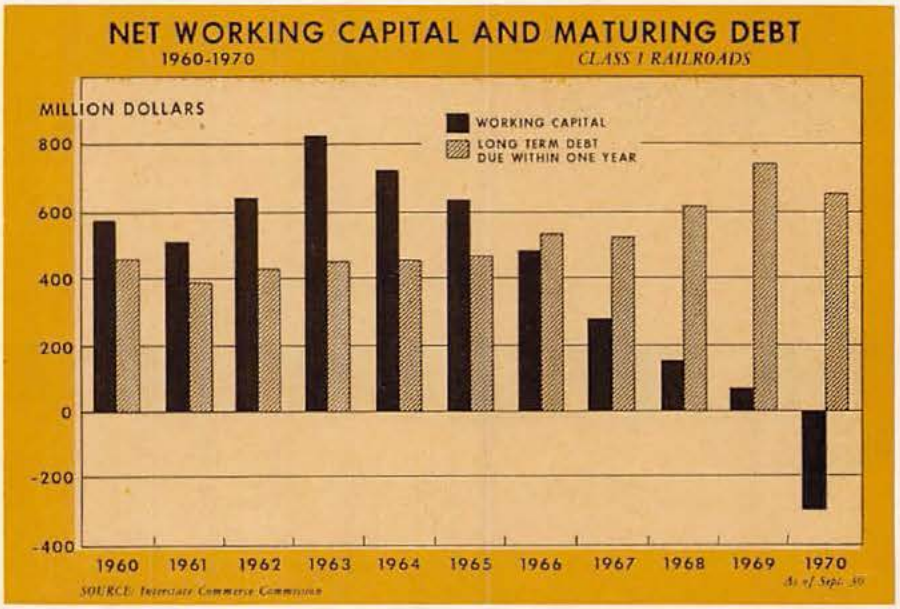
● **Rate-of-return sinks.** Rate-of- return was expected to dip under 2%, to 1.76%. By comparison, rate-of-return was above 2.50% in 1939, when net income amounted to only $93 million. And the rate wasn't really much lower, 1.37%, in 1932—when the net "income" was actually a deficit of $139 million and all three regions, East, West and Southeast, were in the red.

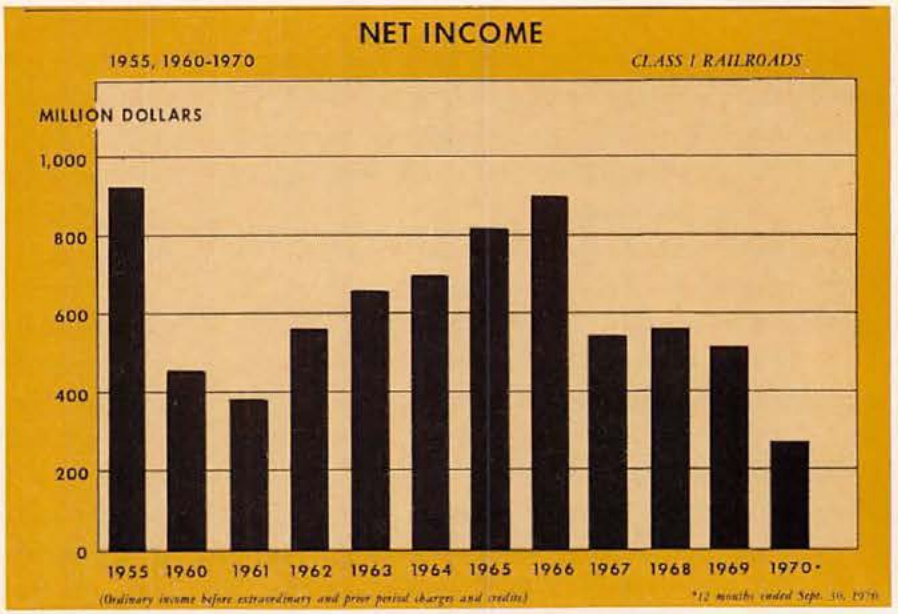
Without the rate increases of recent years, it's hard to say where railroads would be—except to say that they would be in some state short of survival outside of reorganization. Estimates are that increases authorized in four Ex Parte proceedings have produced revenue gains at a rate of about $1.1 billion a year, up through the Ex Parte 265 case.

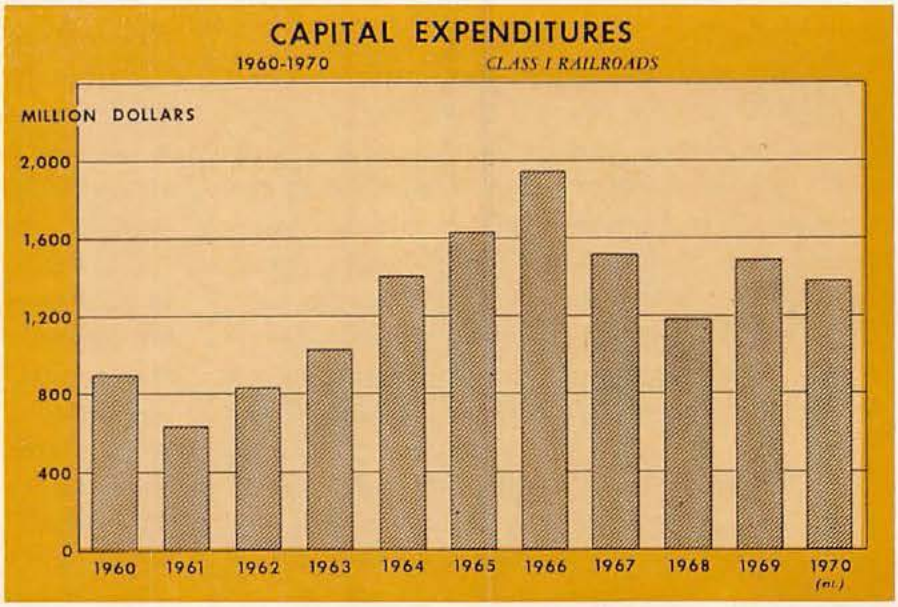
Meanwhile, however, cost increases have been brutal. Fuel, material and supplies purchase costs were at a record high in 1970. Labor costs have been on the same uptrend. Currently, railroads are facing (1) Congressionally-imposed retroactive pay increases for members of four unions, including the three biggest unions; and (2) the strong possibility that additional stiff increases will be coming due in 1971 and 1972, for members of all unions, with the further possibility of 1970-retroactive boosts for a number of unions not involved in the case which Congress temporarily "settled" by legislating increases.

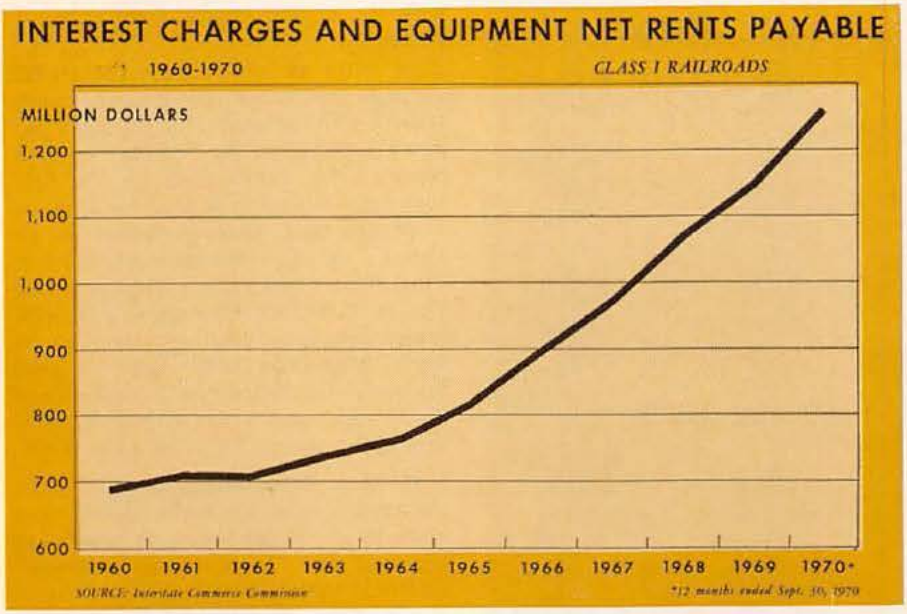
Increases recommended by an emergency board, in the case which Congress imposed a '70 settlement, would result in annual wage increases of $1.6 billion at the end of the three-year contract period which the board recommended, if the increases were applied to all rail employees.

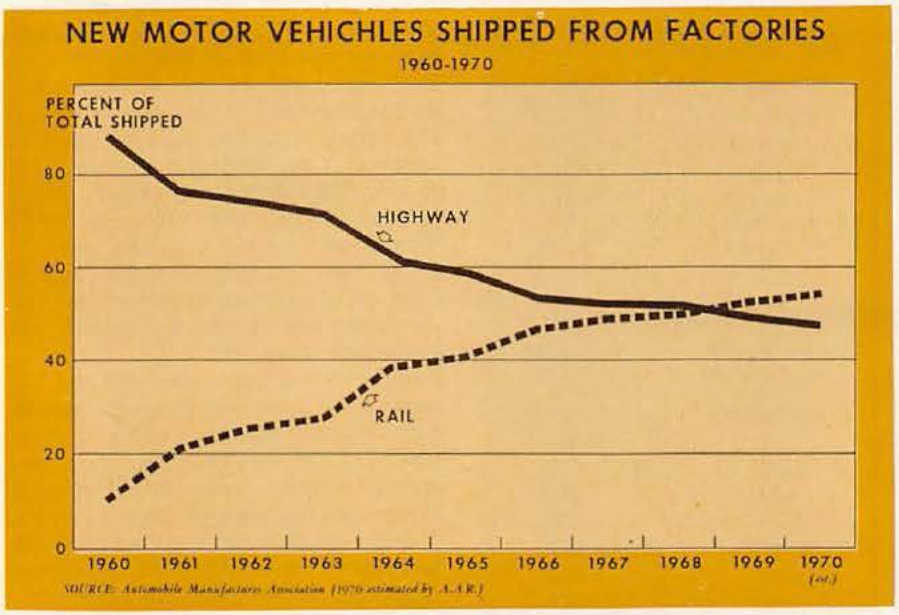
● **Freight revenues up, but . . .** The industry showed a revenue increase in only one major area, freight revenues, in 1970. Passenger, mail and express revenues all declined.











At the same time, expenses increased in every major area—maintenance of equipment, maintenance of way and especially in transportation expenses.

Reflecting the depressed state of the industry, Federal income taxes were heading downward—but payroll taxes and other tax payments were going in the opposite direction.

The indices showed what was happening, on the cost side. With a 1957-59 average used as a 100 index, 1970 saw the wage index at 166.3 (up from 152.1 in 1969), the material price index at 116.7 (up from 112.6) and the combined wage/price index at 155.0 (up from 143.1).

Other indices were equally disturbing. Interest charges and equipment net rents payable continued a steady climb, to well above $1.2 billion in 1970. The average interest rates on equipment obligations continued a climb that began after 1965. Net working capital, which has been declining since 1963, dropped into a deficit position. And long-term debt due within one year topped $600 million—somewhat lower than in 1969 but higher than in any other year in the past decade.

As Tom Goodfellow put it, 1970 "wasn't a good year for the railroads."

Capital expenditures

Under the circumstances, it was difficult to fault railroads on their improvement-spending programs in 1970. Net railway operating income and net ordinary income plummeted from 1969 levels, rate-of-return sagged below 2%, money was tight and interest rates were soaring.

Yet, by AAR estimates, railroad capital budgets added up to $1.34 billion in '70—divided $980 million for equipment and $360 million for fixed plant. These figures do not include the investment made by private car companies or by lessors of rail equipment, investment estimated at a minimum $500 million.

To put rail investment into the context of the times, 1970's investment of $980 million for rolling stock was the second-lowest in the past five years; but it was substantially above the annual investment levels of the early 1960s. Rolling-stock expenditures for 1969 were $1.089 billion; for 1968, only $819 million. Similarly, fixed-plant expenditures were down from spending totals of the four years immediately preceding 1970—but considerably above the levels of 1965 and before.

In terms of total spending, railroads topped the $1-billion mark for the eighth straight year.

● **Car-fleet additions.** Most of the investment, of course, has been in additions to the freight-car fleet. In 1970, this activity translated into orders for close to 50,000 cars—with a November-December buildup in orders putting the total higher than some forecasters had thought it would be. The late-year buildup also brought an increase in the backlog of cars on order and undelivered, which topped 25,000 by year end.

Meanwhile, installations of new and rebuilt freight cars in 1970 added up to an estimated 74,000 units, down only slightly from the 75,972 cars installed in 1969 (by railroads and private car lines).

Orders for diesel-electric locomotive units also held up well in 1970, though deliveries were off (due in part to the General Motors strike which cost GM's Electro-Motive Division 10 weeks' production). By AAR estimate, deliveries totaled 975 units, down from 1,263 in 1969. Thus, 1970 was the first year since 1963 that installations fell below 1,000.

Meanwhile, railroad purchases of fuel, material and supplies in 1970 hit an all-time high, estimated at $1.7 billion. During the 1960s, purchase costs peaked at $1.605 billion in 1966, then declined in 1967 and '68 before climbing to $1.654 billion in 1969.

Traffic trends

Economists say the dip in the general economy in 1970 represented the mildest recession the nation has experienced during the postwar years—but mild though it may have been, it was strong enough to contribute to a decline in rail freight traffic.

In 1969 railroads set a record high in revenue ton-miles generated, 768 billion. Last year, there was a drop of less than 1%, to 761 billion—which, on the ton-mile scale, left 1970 standing

Condensed Income Account—1966, 1969 and 1970

	1966 (millions)	1969 (millions)	12 mos. to 9/30/70 (millions)
Total operating revenues	$10,655	$11,450	$11,897
Total operating expenses	8,118	9,067	96,08
Taxes	968	1,029	1,048
Rents (net debit)	523	700	748
Total expenses, rents and taxes, excl. Fed. income taxes	9,422	10,689	11,322
Ratio to revenues	88.4%	93.4%	95.2%
Net railway operating income	$ 1,046	$655	$492
Net income (ordinary)	904	514	257

Operating Revenues—1966, 1969 and 1970

	1966 (millions)	1969 (millions)	12 mos. to 9/30/70 (millions)
Freight	$9,281	$10,346	$10,820
Passenger	544	439	425
Mail	304	177	165
Express	67	28	24
All other	459	460	463
Total	10,655	11,450	11,897

Operating Expenses—1966, 1969 and 1970

	1966 (millions)	1969 (millions)	9/30/70 12 mos. to (millions)
Maintenance of way	$1,304	$1,503	$1,588
Maintenance of equipment	1,844	2,002	2,137
Transportation	4,139	4,596	4,877
Traffic, general and other	831	966	1,007
Total	8,118	9,067	9,608

Rate of Return and Net Income—1960-1970

Year	Net railway operating income (millions)	Rate of return on investment after depreciation	Net income after fixed charges* (millions)
1960	$ 584	2.13%	$445
1961	538	1.97	382
1962	726	2.74	571
1963	806	3.12	652
1964	818	3.16	698
1965	962	3.69	815
1966	1,046	3.90	904
1967	676	2.46	554
1968	678	2.44	569
1969	655	2.36	514
12 mos. to 9/30/70	492	1.76	257

Index of Wage Rates and Material Prices—1960-1970

(Averages 1957-1959 = 100)

Year	Wage Index	Price Index Fuel	Price Index Other material	Total material	Index of wage rates and prices
1960	107.8	94.9	103.6	101.2	106.1
1961	110.4	96.3	103.7	101.7	108.2
1962	112.9	95.5	103.1	101.0	110.2
1963	114.1	95.0	102.8	100.7	111.1
1964	117.0	89.5	103.7	100.0	113.1
1965	123.2	91.7	104.5	101.1	118.2
1966	127.3	93.2	106.3	102.8	121.7
1967	135.6	95.9	110.1	106.4	129.0
1968	142.6	99.3	113.0	109.3	135.0
1969	152.1	102.3	116.2	112.6	143.1
1970 (Prel.)	166.3	106.0	120.5	116.7	155.0

* Ordinary income before extraordinary and prior period charges and credits.
Note: Statistics shown above and elsewhere in this article are for Class I line-haul railroads unless otherwise indicated.

with the second highest total ever reported.

In terms of carloadings, the traffic slippage was more pronounced. Loadings in 1970 totaled 27.1 million cars, down 3.8% from the 28.2 million cars reported for 1969. And for the first time since the boom in piggyback began a decade ago, loadings failed to go ahead of the previous year's pace. Final figures will show a drop of about 6% in TOFC/COFC carloadings, with trailer/container loadings down about 6.4%. Mail-and-express piggyback held up somewhat better, with carloadings down 2.2% and trailer/container loadings up by almost 3% from 1969 totals.

● **Most commodities down.** On a commodity basis, the traffic decline went virtually across-the-board. Loadings are reported for 21 commodity groups—and only three showed increases. Grain loadings were up by more than 187,000 cars, or 14.6%; loadings of food and kindred products were up by more than 38,000 cars, or 3%; and coal loadings were up by a small fraction of 1%. Coal was again by far the top commodity handled, in terms of loadings, accounting for more than 5.1 million carloads of the total of more than 27.1 million. Metallic ore loadings, which had been above two million in 1969, slipped last year to 1.9 million cars.

On the decrease side, the biggest loser on a percentage basis (except for lcl traffic) was the motor vehicles and equipment category, down 17% because of lower auto sales and the 10-week pre-Christmas General Motors strike. Even with this traffic decline, however, railroads increased their percentage—already over 50%—of new motor vehicles shipped from factories.

Other categories of significantly lower carloadings in 1970 were petroleum products, 10.5%; stone, clay and glass products, 8.9%; metals and products, 8%; farm products other than grain, 7.5%. And the rather general phasing-out of lcl operations is leaving very little to phase out. Loadings in this smallest of commodity categories were 95,293 cars in 1969 and just 46,754 cars last year, a drop of more than 48,500 cars, or 50.9%.

Passenger traffic, too, declined in '70—continuing the trend that has seen revenue passenger-miles fall from more than 20 billion in 1961 to less than 11 billion last year.

● **Still the innovators.** Despite the general softness of the economy, however, 1970 was not a bad year at all for innovations in rail service—especially in the area of unit-train operations and run-through train operations.

The year was marked, for example, by continued expansion of unit-coal-train service, including inauguration of the first train with utility-owned cars

and motive power; by development of the unit-train concept for movement of auto parts and motor vehicles; by use of the trainload unit to move orange juice from Florida to the New York area; and, on one occasion, by unit-train movement of prefabricated housing.

Run-through train operations and interroad preblocking have now become so common that announcements of new services almost pass unnoticed. Among the most active roads have been those providing through service Southeast/Southwest and Southeast/West/Northwest.

Freight rates

The story of rail freight-rate action in 1970 began late in the first quarter, with eastern and western lines asking for an immediate 6% increase. From that point, the chronology ran like this:

—The ICC turned down an immediate increase but said the railroads might file upon "not less than 75 days' notice," with an effective date of no earlier than June 2. The Commission also said it would investigate "the adequacy of all freight rates and charges" of U.S. railroads.

—Southern roads joined with the others in asking approval of a 6% increase. Meanwhile, the ICC set hearings in Ex Parte 262, through which railroads had been granted a 6% increase in November 1969.

—First-quarter earnings reports gave the industry a set of bleak statistics with which to buttress its case for the proposed June 2 6% increases. Net railway operating income for the quarter fell from $142 million in 1969 to $60 million; ordinary income dropped from $94 million to a deficit of more than $2 million. The AAR pointed out that cost increases since 1966 had topped by $1.1 billion the added revenue gained through three previous rate increases; in first-quarter 1970, revenue per 1,000 gross ton-miles was $6.83, but costs were $7.01.

—In the new case, Ex Parte 265, the ICC granted a 5% interim increase, which was placed in effect June 9.

—Meanwhile, back at Ex Parte 262, the Commission was still working, and in August it gave basic approval to the 6% increases that had gone into effect in November '69. There were, however, certain exceptions. The increase was made permanent for most commodities, but it was reduced to 5% on grain and grain products in the West and on eastbound transcontinental shipments of fresh fruits and vegetables.

—Still in August, eastern and western roads came to agreement on another proposal, calling for an 8% increase effective Sept. 15 and a 7% boost effective Nov. 1. The ICC denied the request, but said it would authorize filing of new tariff schedules upon not less than 60 days' notice, with an effective date no earlier than Nov. 18. And, the Commission said, it would begin an immediate investigation of the adequacy of freight rates and charges.

—On Sept. 11, southern roads pro-

Railway Tax Accruals—1966, 1969 and 1970

	1966 (millions)	1969 (millions)	12 mos. to 9/30/70 (millions)
Payroll taxes	$439	$533	$562
Federal income taxes	186	106	82
All other taxes	343	390	405
Total	968	1,029	1,048

Capital Expenditures and Purchases—1960-1970

Year	Gross capital expenditures: Rolling stock (millions)	Other facilities (millions)	Total (millions)	Purchases of fuel, material and supplies (millions)
1960	$633	$286	$919	$1,463
1961	427	219	646	1,262
1962	593	240	833	1,311
1963	785	259	1,044	1,401
1964	1,140	278	1,417	1,476
1965	1,304	327	1,631	1,498
1966	1,554	399	1,953	1,605
1967	1,148	374	1,522	1,591
1968	819	368	1,187	1,534
1969	1,089	421	1,509	1,654
1970 (est.)	980	360	1,340	1,700

Note: Capital expenditures of Class I railroads do not include expenditures for railroad equipment made by private car companies and lessors. Purchases do not include materials applied by contractors or which otherwise bypass the material and supplies account.

Inventory of Equipment—1960-1970

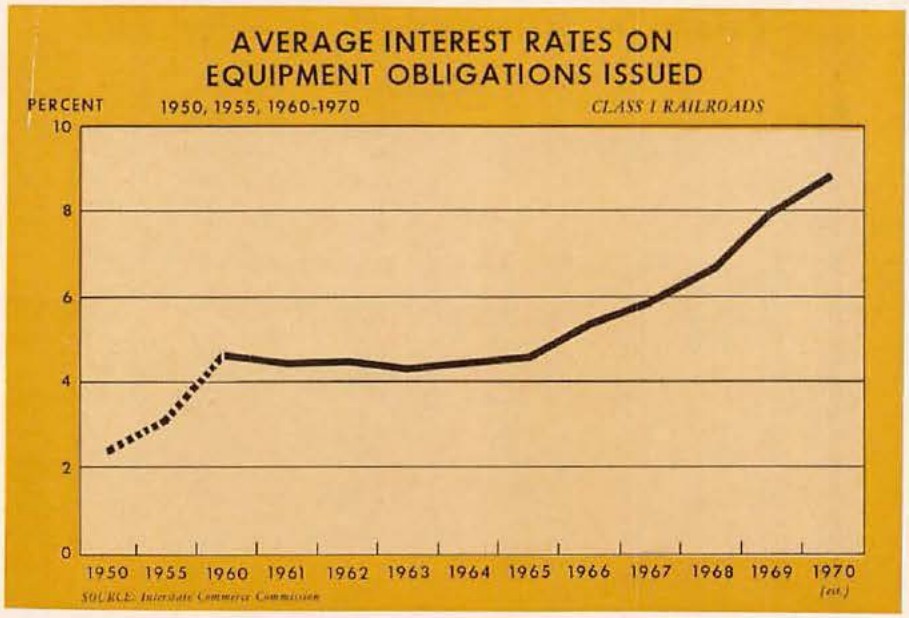
December 31	Freight cars*	Passenger cars (incl. Pullman)	Head-end passenger-train cars	Diesel locomotive units	Other locomotive units
1960	1,968,771	16,181	12,818	28,369	774
1961	1,907,723	15,004	12,345	28,240	614
1962	1,852,992	14,240	11,788	28,170	505
1963	1,817,026	13,732	11,369	27,969	478
1964	1,802,582	12,507	11,154	27,879	433
1965	1,803,227	11,371	10,502	27,433	399
1966	1,834,963	10,665	9,932	27,516	378
1967	1,827,376	9,845	9,147	27,317	353
1968	1,804,712	8,736	6,746	27,045	331
1969	1,795,102	8,280	4,170	26,749	290
1970 (est.)	1,793,000	7,200	3,700	26,700	280

*All cars, railroad and private.

New Equipment Installed—1960-1970

Year	Freight cars	Passenger-train cars	Diesel-electric units	Other locomotives
1960	58,322	239	440	13
1961	34,241	204	242	32
1962	39,822	285	754	28
1963	48,255	143	806	13
1964	83,266	408	1,116	—
1965	89,653	577	1,440	—
1966	106,058	103	1,394	—
1967	100,181	138	1,067	—
1968	68,836	89	1,055	—
1969	75,972	292	1,263	—
1970 (est.)	74,000	n.a.	975	—

Note: Units of equipment rebuilt are counted as new. Freight car installations include cars of all railroads and private car lines. n.a. Not available.



Freight and Passenger Traffic—1960-1970

	Revenue carloadings (thousands)	Piggyback carloadings (thousands)	Revenue ton-miles (millions)	Revenue passenger-miles (millions)
1960	30,441	554	572,309	21,258
1961	28,590	591	563,361	20,283
1962	28,722	706	592,862	19,902
1963	28,871	797	621,737	18,494
1964	29,027	891	658,639	18,245
1965	29,248	1,034	697,878	17,378
1966	29,623	1,163	738,395	17,085
1967	28,084	1,207	719,498	15,193
1968	28,253	1,337	744,023	13,110
1969	28,238	1,344	767,841	12,159
1970	27,160	1,265	e760,000	e10,800

e—Estimated
Note: Piggyback carloadings shown above do not include mail and express, of which 187,772 piggyback carloadings were handled in 1970.

Carloadings by Commodities—1970 vs 1969

	1970	1969		Incr. or Decr. 1970 vs. 1969 Cars	%
Grain	1,467,937	1,280,667	I	187,270	14.6
Other farm products	827,723	894,521	D	66,798	7.5
Metallic ores	1,952,676	2,031,076	D	78,400	3.9
Coal	5,163,384	5,152,549	I	10,835	0.2
Crushed stone, gravel and sand	1,457,355	1,556,347	D	98,992	6.4
Nonmetallic minerals	506,866	541,400	D	34,534	6.4
Grain mill products	993,370	1,042,630	D	49,260	4.7
Food and kindred products	1,301,146	1,263,109	I	38,037	3.0
Primary forest products	1,297,428	1,301,593	D	4,165	0.3
Lumber and wood products except furniture	741,911	796,154	D	54,243	6.8
Pulp, paper and allied products	1,195,632	1,253,127	D	57,495	4.6
Chemicals and allied products	1,415,296	1,481,963	D	66,667	4.5
Petroleum products	536,327	599,242	D	62,915	10.5
Stone, clay and glass products	1,002,673	1,101,187	D	98,514	8.9
Coke	433,171	436,573	D	3,402	0.8
Metals and products	1,360,968	1,479,615	D	118,647	8.0
Motor vehicles and equipment	960,451	1,157,375	D	196,924	17.0
Waste and scrap materials	741,956	755,151	D	13,195	1.7
Forwarder and shipper association traffic	360,862	380,084	D	19,222	5.1
All other carloads	3,396,361	3,637,751	D	241,390	6.6
LCL traffic	46,754	95,293	D	48,539	50.9
Total Cars Loaded	27,160,247	28,237,407	D	1,077,160	3.8

posed a 6% interim increase, to run through Feb. 28, 1971; and a 15% boost on coal moving from Southern territory. The roads said they would file for increases on a selective basis after traffic analyses were completed. Eastern, western and southern proposals were combined by the ICC as Ex Parte 267, and 267 was coupled with Ex Parte 265 in which the interim 5% increases had become effective in June.

—In early November, the Commission acted on both 265 and 267. In Ex Parte 265, the ICC lifted a 1% suspension it had imposed in giving the railroads 5% instead of the asked-for 6%. Then, in Ex Parte 267, the ICC granted increases of 8% in the East and West and 6% in the South. All of these increases went into effect Nov. 20.

—Eastern roads quickly moved back to the Commission with a request that the full 15% increase be granted. The evidence, they said, "establishes that any delay in placing the increases in effect in full will have serious short- and long-range effects upon the carriers' ability to provide adequate transportation service." Western lines also asked for the additional 7%.

—The Commission turned down the eastern and western requests. At about the same time, it also said it would investigate the freight-rate structure to determine "the nature of further proceedings." This investigation, docketed as Ex Parte 270, was deemed necessary "because the criteria for determining revenue need and the lawfulness of general freight rate increases . . . do not comprehend consideration of the extent to which over-all movements of particular commodities contribute to net carrier revenue." Still another ICC investigation will look at the base to be used in determining rate of return. This one was docketed as Ex Parte 271.

—Southern roads, before yearend, asked the ICC for authority to institute selective increases ranging from 3% to 15% when the previously-granted 6% interim expires next Feb. 28. On the last day of December, however, the Commission denied the request, saying that the carriers were "presenting a completely new case and to incorporate it into the present record would only serve to delay the final decision." Southern roads, the ICC added, could refile in a totally new proceeding "and with the proper supporting evidence."

Management/labor

The largest single element in railroad expense—wage and other labor-related costs — took another sharp

turn upward in 1970, with every indication that further increases are coming in 1971. In each of two major wage cases, Congress was the arbiter and imposer of settlements.

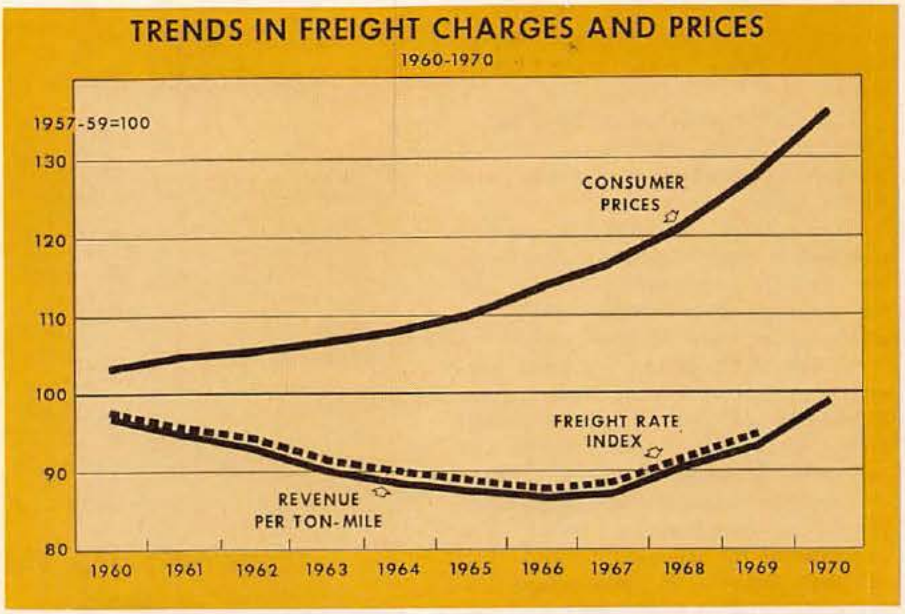
Twice faced with strike situations, Congress twice acted—to place in effect 1969-70 wage terms covering shopcraft unions and later to order 1970 increases for four other unions.

In the shopcraft dispute, a holdover from 1969, negotiators had agreed on a package. Congressional action was forced after members of the Sheet Metal Workers rejected the proposed settlement—largely because it also included a so-called "incidental-work" rule. This rule was incorporated in the imposed settlement. So were wage boosts of 2% to be made effective as of Jan. 1, 1969; 3% plus 5 cents an hour for mechanics July 1, 1969; 10 cents an hour Sept. 1, 1969; 7 cents an hour for mechanics Feb. 19, 1970; 5% Jan. 1, 1970; 4 cents an hour April 1, 1970; and 4 cents an hour Aug. 1, 1970. This settlement covered Sheet Metal Workers, Machinists, Electrical Workers and Boilermakers & Blacksmiths. It was later agreed to by Carmen and Firemen & Oilers. Under a re-opening clause, the six unions served new demands late in 1970—calling for 1971 and 1972 increases of 20% each—and this new dispute remained unresolved at yearend (as did older disputes involving a number of other organizations, including the Brotherhood of Locomotive Engineers).

● **No "pattern."** The carriers sought to use the 1970 shopcraft wage boosts as a pattern for 1970 for other unions —but it didn't work. Demands served by four unions in 1969—the Clerks, Maintenance of Way Employes, Hotel and Restaurant Employes and United Transportation Union—went to mediation early in 1970, but in July and August the National Mediation Board declared its efforts unsuccessful. In each instance, NMB proposed arbitration, the carriers accepted and the unions declined.

Subsequent talks involved Department of Labor personnel with NMB and the parties—to no avail. Things came to a head Sept. 18, with strike activity on three roads, with the railroads getting a temporary restraining order against a selective strike and with President Nixon creating a five-member emergency board to take testimony and make recommendations.

Emergency Board 178 made its report Nov. 9. A day later, the Clerks rejected the report and set a strike date. Two days after that, the other three unions also rejected the report. Formal negotiations resumed Nov. 23, with the railroads reluctantly accepting Board's 178's proposals, observing that this represented "a calculated risk that the industry could survive" the granting of the largest wage increases in the industry's history.



Board 178's recommendation called for increases of 5% to be made effective as of Jan. 1, 1970; 32 cents an hour Nov. 1, 1970; 4% April 1, 1971; 5% Oct. 1, 1971; 5% April 1, 1972; and 5% Oct. 1, 1972. By the board's reckoning, "the net result for the whole three-year period . . . is well over 9% per year in total increases but well under 9% per year in actual cost to the carriers because of the deferred effective dates."

● **Rules reform?** The board also proposed both immediate and long-range revision of work rules: "We have been convinced that there are unduly restrictive work rules, that the dual system of pay is outdated, that there are many unwarranted arbitraries, and that, indeed, the industry's labor relations in general are in need of modernization."

The strike deadline was Dec. 10—and on Dec. 10, at 12:01 a.m., a nationwide strike began. As it began, Congress was putting the finishing touches on legislation which President Nixon subsequently signed in the early-morning hours of Dec. 11. Faced with a strike-stopping law and then with a temporary restraining order, leaders of three unions ordered their men back to work. Only the Clerks remained on strike. They isued a back-to-work order on the evening of Dec. 11, after a federal judge warned of contempt citations and fines of $200,000 a day.

In stopping the strike, however, Congress took the unprecedented step of putting into legislation a wage increase—the full amounts recommended by Board 178 for 1970. Congress did not, however, go all the way and legislate into reality any of the work-rules changes which also made up a vital part of the board's report. Thus, while the emergency board tried to strike a balance between the interests of labor and management, Congress gave weight only to the interests of labor. And the whole dispute was left open, possibly to flare up again March 1, when a moratorium on strike/lockout action is scheduled to expire.

The past year also saw the latest chapter in the continuing saga of fireman-off/fireman-on. Despite periodic rumors that the carriers and the United Transportation Union were approaching agreement, there was none. And early in July, UTU members walked off the job on three roads—Baltimore & Ohio, Louisville & Nashville and Southern Pacific. An emergency board subsequently investigated the dispute and submitted a report generally favorable to the carriers' position. But there was little further action in the case, as the wage dispute involving UTU and the three other unions began heating up.

Statistically, 1970 continued the basic trends of the '60's. Total rail employment declined again, though the net reduction in number of employees was smaller than in any year of the '60s save one. Total compensation increased again—and the net increase was the biggest one recorded in the past 10 years. In terms of total payroll, costs bottomed out early in the 1960s and have been heading upward ever since. And for the first time in 1970, estimated average annual earnings per emplyee topped $10,000.

The ASTRO report

In the words of America's Sound Transportation Review Organization (ASTRO), "It is starkly ironic that

railroads have reached a low point in strength just as their national importance is being even more keenly sensed."

The AAR established ASTRO late in 1969, to do an exhaustive study of current transportation problems and future needs.

Basic elements of ASTRO's recommendations were a proposal for "creative Federal involvement" and a call for national policy which would treat all forms of transportation evenly.

George A. Smathers, ASTRO general counsel and former senator from Florida, noted that the report "covers many areas and will engage all branches of government, as well as the industry itself, in a thorough appraisal of transportation policy. The problems of the railroads, he said, "can be laid directly to government favoritism of other modes and the constraints it has imposed over the years on the railroad industry. Any course of action which ignores these conditions will be shortlived. Failure to cope with outmoded federal policies and unbalanced government promotion can only lead to a repetition of the events of the past few weeks [Penn Central filing for reorganizetion]. Because the railroad industry operates as an integrated system, even the strongest carriers will be caught up in the chain of disruptions."

● **Nationalization, no.** ASTRO rejected nationalization as a solution. This, the report said, "would entail enormous cost to the taxpayers." Acquisition costs, it estimated, might run as high as $60 billion, and the capital-improvement needs of the industry would still be left untouched.

ASTRO guaged these capital needs at $36 billion in the 1970-80 period: "The crisis in the rail industry is that it is rapidly losing its ability to find the money it needs for growth . . . [Earnings] are totally inadequate to sustain needed investment for the future, even with massive borrowings."

ASTRO's recommendations were oriented to six basic areas:

—First, ASTRO said, treatment of basic transportation facilities must be balanced by the Federal government. This would include relief from local property-taxation burdens, Federal assistance in rail-highway grade-crossing programs, Federal aid in right-of-way modernization, and Federal assistance in equipment supply.

—The regulatory outlook should be re-oriented. Federal promotion should be exercised fairly, railroads should be allowed to price their services in line with economic and competitive reality, regulatory delays should be reduced through reforms in the administrative process.

Prices, Freight Rates and Revenue Averages—1960-1970

Year	Consumer price index (1957-59 = 100)	ICC freight rate index (1950 = 100)	Revenue per ton-mile (cents)	Revenue per passenger-mile (cents)
1960	103.1	116	1.403	3.011
1961	104.2	114	1.374	3.079
1962	105.4	112	1.348	3.110
1963	106.7	109	1.310	3.179
1964	108.1	107	1.284	3.168
1965	109.9	105	1.266	3.182
1966	113.1	104	1.257	3.182
1967	116.3	105	1.269	3.195
1968	121.2	109p	1.310	3.389
1969	127.7	112e	1.347	3.608
1970	135.3e	n.a.	1.440e	3.890e

p Preliminary. e Estimated. n.a. Not available.

Employees and Their Compensation—1960-1970

Year	Average number of employees	Total payroll (thousands)	Average annual earnings per employee	Average straight-time Hourly rate	Average straight-time Hourly earnings
1960	780,494	$4,893,558	$6,270	$2.62	$2.80
1961	717,543	4,623,982	6,444	2.69	2.87
1962	700,146	4,662,065	6,659	2.75	2.95
1963	680,039	4,629,566	6,808	2.78	2.99
1964	665,034	4,697,884	7,064	2.85	3.06
1965	639,961	4,793,066	7,490	3.00	3.22
1966	630,895	4,879,273	7,734	3.10	3.33
1967	610,191	4,933,663	8,085	3.30	3.56
1968	590,536	5,110,636	8,654	3.47	3.74
1969	578,277	5,362,754	9,274	3.70	4.00
1970 (est.)	568,000	5,750,000	10,125	4.05	4.39

—The law and the regulatory process should encourage management initiative. Creation of "total transportation" companies should be permitted, sound rail mergers should be encouraged, and the path to abandonment of little-used lines should be eased.

—Federal research-and-development efforts related to rail transportation should no longer be allowed to lag behind R&D efforts involving other forms of transportation.

—Federal policy with regard to rail passenger service should be based on "fairness and realism."

—Rail management and rail labor must make their own positive commitments to the future.

● **The capital needs.** ASTRO's estimate of capital needs pegs the annual spending level far above that which railroads have been able to maintain. Freight-car requirements are set at $18.6 billion, locomotive programs at $5.95 billion, rail and tie needs at $5.8 billion, and requirements for other roadway and structures programs at more than $6 billion.

Although introduction of specific ASTRO-oriented legislation will come in 1971, certain related items were considered—some successfully—by the 91st Congress in 1970. Rationalization of the passenger-service situation was attempted through passage of Railpax legislation. Tax discrimination measures cleared one house of Congress. Legislation dealing with freight-car supply was introduced and at least got a preliminary kind of consideration before the 91st expired.

Meanwhile, railroads — individually and jointly were stepping up public-information programs designed to build support for ASTRO programs which will come before the 92nd Congress.

Railroad reorganization

Back in the 1930s, railroad reorganization was much in the news. In the dynamic 1960s, it was not. There were, to be sure, "special situations" involving a couple of roads — New Haven and Central of New Jersey. But there was nothing remotely to compare with 1970—when first Boston & Maine sought the protection of the reorganization laws, and then Penn Central filed, and finally Lehigh Valley came in. Other roads were shaky, but at least 1970 came to an end without any further petitions—and with Congress taking at least minimal action with the

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Perhaps the most positive development was consummation, finally, of Burlington Northern consolidation. BN had its problems during 1970, mostly involving necessary refinancing and the high cost of money. But this longest of U.S. roads did seem to be providing the kind of improved service to customers which its proponents had promised.

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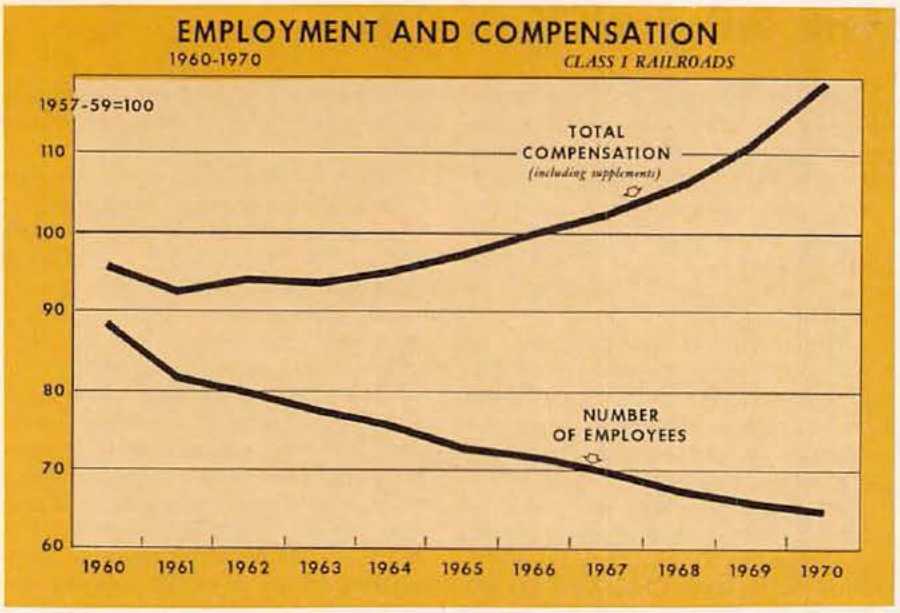

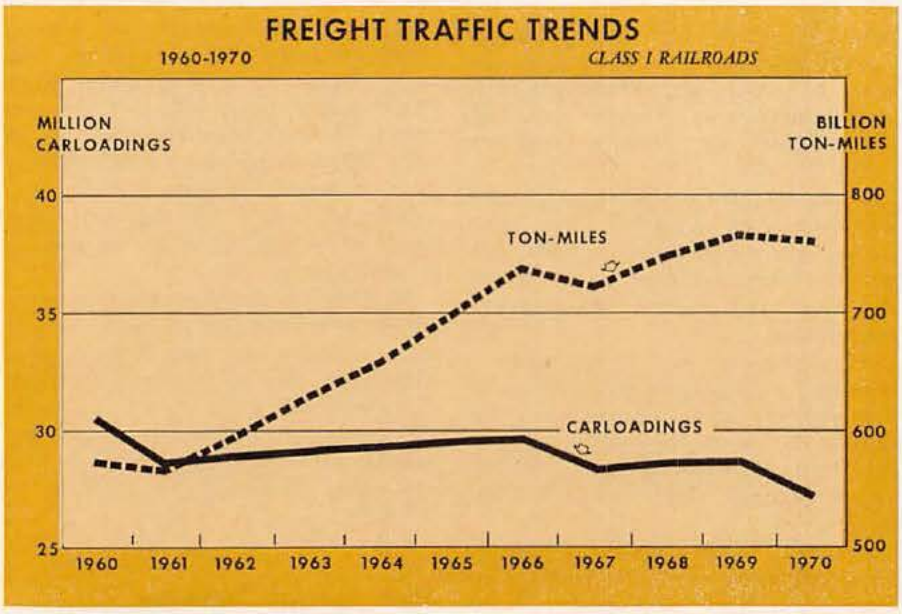

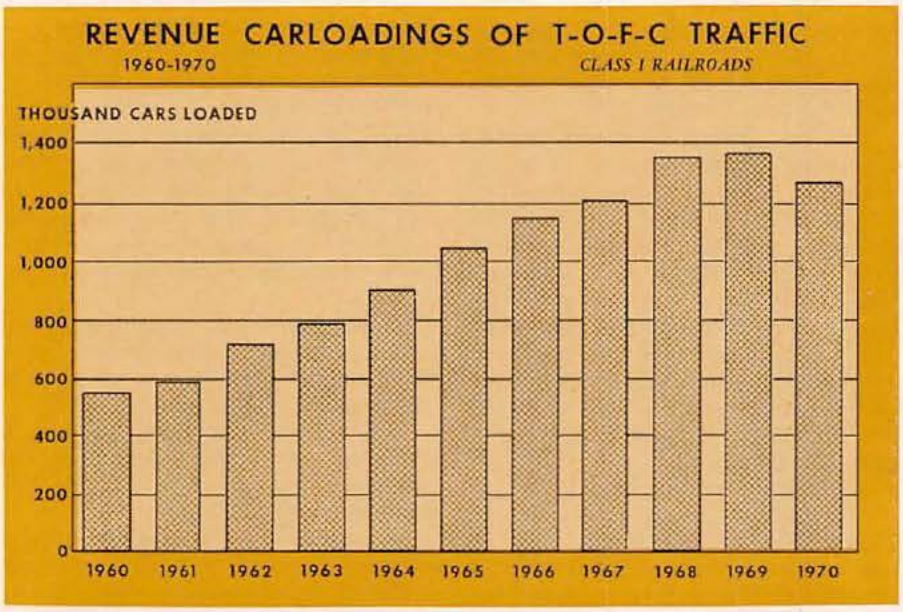

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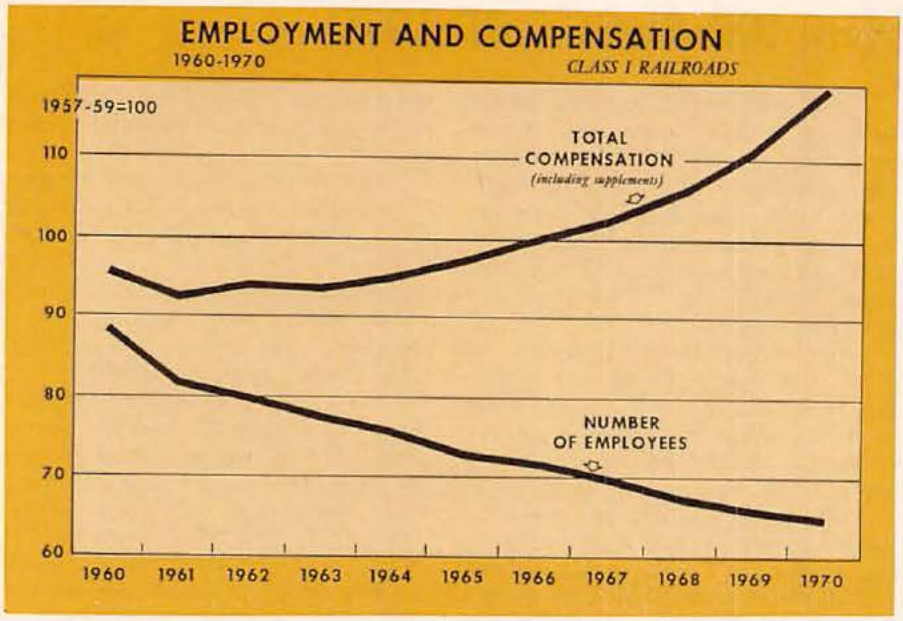

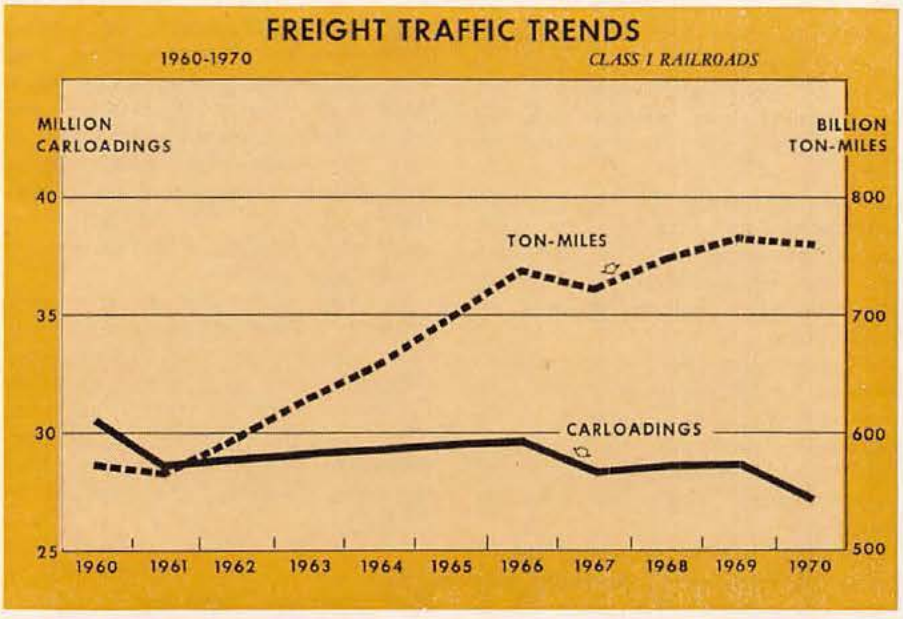

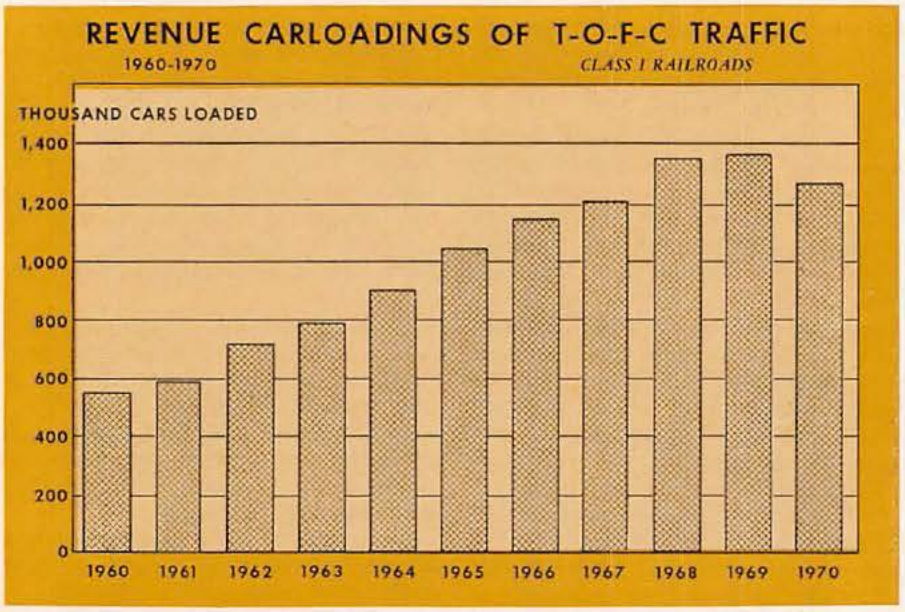

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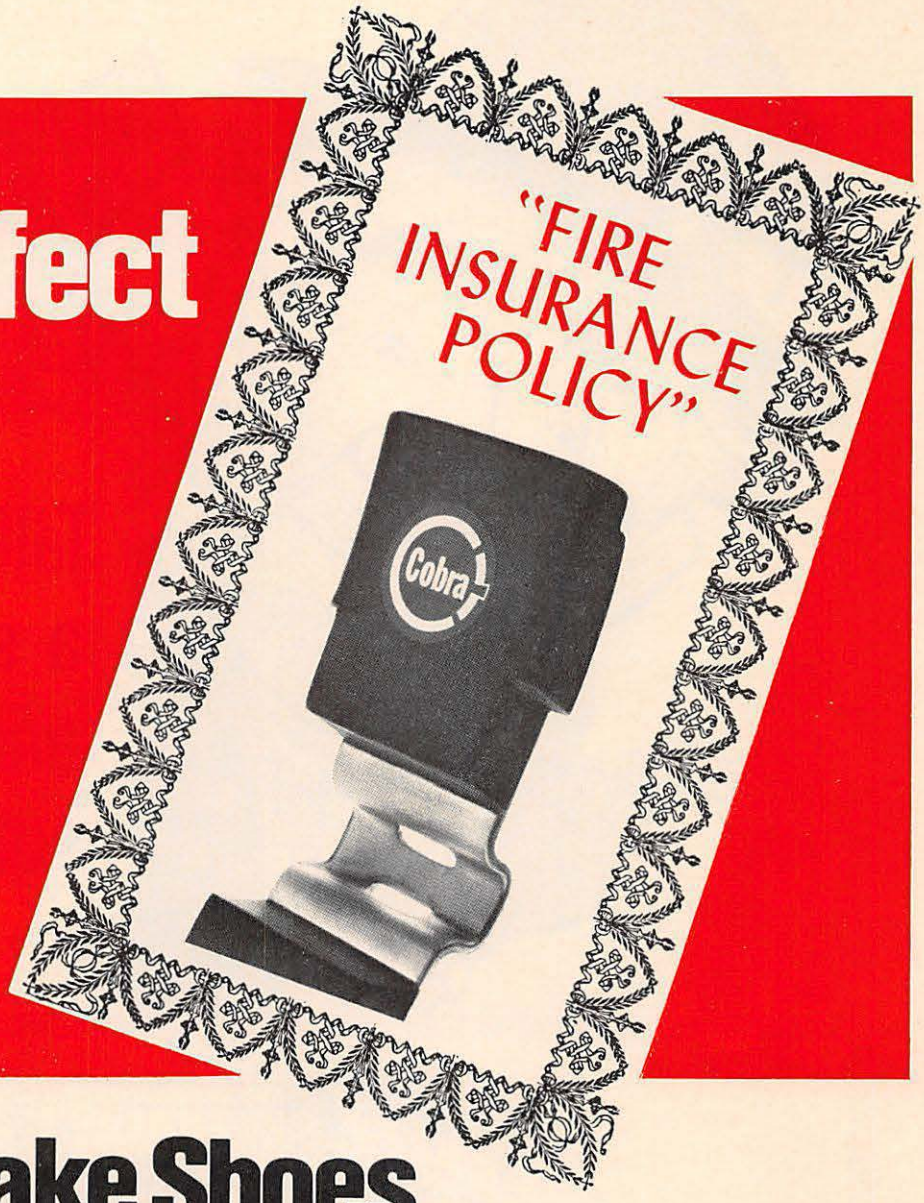

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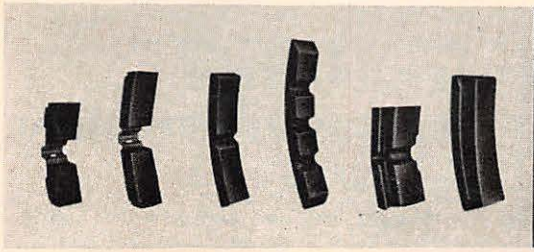

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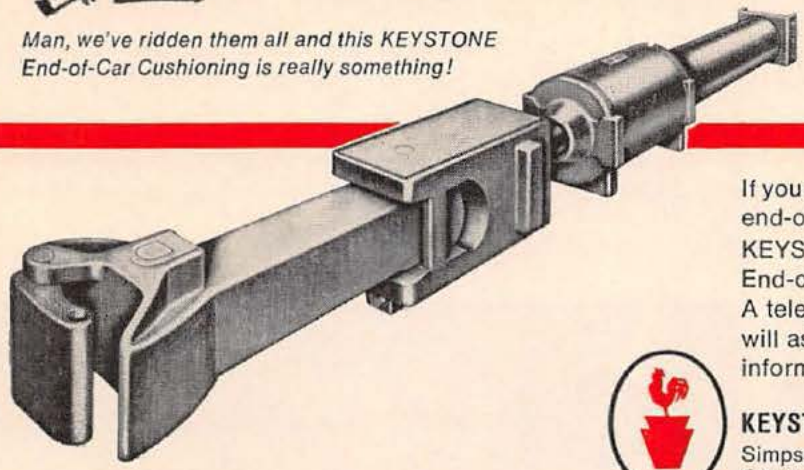

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(and your car maintenance budget, too!)

The shipper is no sentimentalist when it comes to loading and unloading boxcars. His interest is emptying or filling in a hurry. The car door is incidental. But, that's your car door, and it deserves some respect. It costs a lot of money to repair it, and a whole lot more to replace it. Make it easy on the shipper. Put a Slidewell Door Control on your car door (sliding or plug type). He'll use it. No more ramming doors with forklifts, or pulverizing and bending with sledgehammers and crowbars. You'll save him time. That's exactly what he wants. So, do a good turn for your shippers and give them Slidewell wheels to turn. You'll be doing your car maintenance budget an even bigger favor. A Slidewell costs you less than one car door repair . . . and only a small percentage of replacement cost. Slidewell will put you dollars ahead, door after door after door. CALL OR WRITE HENNESSY FOR COMPLETE DETAILS

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HENNESSY PRODUCTS

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RAILPAX: "NOT REVIEWABLE IN ANY COURT"

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this plan, the number of intercity trains operating would be cut from 366 (as of Nov. 30) to about 150. DOT said the proposed system would maintain some service for 85% of the urban population served under the then-existing network. But this rather positive statement was not enough to head off protests from a variety of sources, charging that the basic system is inadequate. DOT found itself somewhat in the position individual railroads have held for many years—proposing elimination of service and stirring up a hornet's nest.

The act provides for the Secretary to announce a final system Jan. 28, 1971. It also stipulates that this basic system shall become effective on the date it is submitted to Congress "and shall not be reviewable in any court." Some legal sources, however, question whether Railpax will get under way without a test of this and perhaps other aspects of the law.

Meanwhile, railroads were spending quite a bit of time in late-1970 with their own analyses of what Railpax will mean and what it will do. It is not mandatory that a railroad join—but virtually every road now providing passenger service is in fact expected to sign up. Those that do join the corporation may then abandon all service not included in the final, basic Railpax system. Those who choose to stay outside Railpax must continue present service until Jan. 1, 1975.

Railpax itself must maintain service on all of the designated basic routes until July 1, 1973. It may add service at any time, if the additions are judged to be economically practicable. In addition, state, regional or local agencies may request additions to the basic system—provided that the requesting agency pays for two-thirds of the extra costs involved.

Essentially, the government is pledged to back Railpax with a $40-million direct grant and up to $300 million in loans or guarantees. Capitalization will be through payments from participating railroads, which are expected to total about $200 million. The act provides that a railroad joining Railpax must agree to pay each year for three years an amount equal to one-third of 50% of its fully-distributed passenger-service deficit for 1969. These amounts are to be payable in cash or, at the corporation's option, by transfer of equipment or provision of future service. Under the government loan provision of the act, the Secretary is authorized to guarantee loans of up to $100 million to the corporation for purchase or rehabilitation of rolling stock or for other corporate purposes. He is also authorized to make or guarantee short-term loans of up to $200 million to assist railroads in satisfying their commitments by contract to the corporation.

Railpax will be governed by a 15-member board of directors, eight of whom have already been selected by the President. The remaining seven will be chosen by stockholders. Common stock is to be issued to affiliated railroads at the outset; cumulative preferred stock is to be offered to the public "at an appropriate time."

As 1971 dawned, many questions still remained to be resolved—not the least of which concerned the setting up of the basic system. There were high hopes for Railpax—though railroad men, scarred by years of battling passenger deficits, were skeptical of predictions that the corporation could be operating in the black within a few years. Eyeing the reductions in service contemplated in the basic route plan, one newspaper observed that railroads had for years been trying to cut back to service levels which Railpax would reach in one fell swoop—and that railroads had not had overwhelming success in doing so, despite the use of train-off provisions of the Transportation Act of 1958. But, the newspaper observed, perhaps government could make a success of things—by doing what it had not permitted private management to do.

In any event, however, railroads seemed sure to reap some benefits, modest or otherwise. Payments must be made to the corporation, in one way or another. But there will be relief from an unending series of passenger deficits —which, though they have been declining, have still been critical to an industry with a low profit margin.

Commutation service, the only growing part of rail passenger operations, is not affected by Railpax.

Legislative activity

A box-score of Congressional action in rail-associated areas indicates the railroads did not lack for governmental attention in 1970. As noted earlier, Congress intervened twice in rail management labor disputes; and it approved the 1970 Rail Passenger Service Bill. In addition, Congress passed and the President signed a comprehensive rail safety bill, a landmark urban mass transportation assistance act, a high-speed ground transportation research measure, and a railroad loan-guarantee bill.

Legislation barring state and local tax discrimination against railroads was passed by the Senate but not by the House; legislation aimed at setting up a National Freight Car Corporation and at providing loan guarantees for equipment purchases was introduced late in the session and is virtually certain to be before the new Congress in 1971.

● **Safety regulation.**—The Department of Transportation regards the Federal Railroad Safety Act of 1970 as "the most comprehensive step ever taken in this country to protect people affected by rail service . . . For the first time, the Federal government has the authority to move directly and switfly to prevent accidents or to take corrective action if they occur."

DOT calls special attention to provisions covering movement of hazardous materials and dealing with prevention of grade-crossing accidents. But, the language of the bill goes far beyond those two aspects of safety.

Federal rail safety regulation dates back to 1893. But, DOT noted, "Not covered at all by Federal law are wheels, axles, and trucks of railroad cars, or their design, construction and maintenance. Bridges and tunnels are not subject to Federal regulations, and no Federal authority governs track and roadbed. Similarly, there is no general authority regulating employee qualifications, physical requirements and training, or uniform operating rules. The new legislation will enable the Secretary to take positive action to promulgate 'reasonable and necessary rules and regulations establishing safety standards in all areas of railroad safety.' "

Just how the Secretary will move to exercise this authority is as yet unclear. Under the law, he must issue initial safety rules, regulations and standards within one year of enactment of the law. He is also authorized to conduct research, development, testing, evaluation and training for all areas of rail safety. And he has broad emergency powers by which, without a hearing, he can prohibit the use of a facility or equipment which he determines is creating an emergency situation threatening death or personal injury.

● **Separate problems.**—A separate report, also due within one year of enactment, must cover the problem of eliminating and/or protecting rail highway grade crossings, "including a study of measures to protect pedestrians in densely-populated areas along rail rights-of-way."

Hazardous-materials control, which is separately funded, involves a shorter

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Car and locomotive orders; and

Purchaser	No.	Type	Capacity	Length Ft. In.	Weight	Ordered	Delivery Date	Builder
Alaska Railroad	10	Cov. Hopper	100,000	39-8	60,100	Jan.	July	ACF
Aluminum Co. of America	18	Coil	200,000	56	75,000	Apr.	Apr.	U.S. Railway Equip.
American Refrigerator Transit Co.	100	Ins. Box	140,000	52-5	73,800	June	Jan. '71	ACF
	100	Cov. Hopper	200,000	59-2	62,700	Apr.	July	Pullman-Standard
American Smelting & Refining Co.	4	Hopper	200,000	21-	82,000	Apr.	July	Gunderson, Inc.
Atchison, Topeka & Santa Fe.	19	Flat	140,000	89-4	54,600	Feb.	Feb.	Pullman-Standard
	400	Cov. Hopper	200,000	49-7	59,200	Nov.	1971	Pullman-Standard
	400	Cov. Hopper	200,000	49-9	64,700	Nov.	1971	ACF
	400	Box	140,000	50	56,500	Nov.	1971	ACF
	250	Gondola	200,000	53-1 1/8	59,000	Nov.	1971	Greenville Steel
	400	Hopper	200,000	45-1 3/4	59,000	Nov.	1971	Greenville Steel
Aurora Coop. Elevator Co.	10	Cov. Hopper	200,000	54-7	61,000	June	Oct.	Pullman-Standard
Babcock & Wilcox	2	Dep. Cent. Flat	325,000	78-10	195,000	Nov.	June '71	Berwick Forge
Baltimore & Ohio	100	Box	200,000	60	80,500	Sept.	Nov.	ACF
	57	Box	140,000	86	116,200	Jan.	Jan.	Greenville Steel
	38	Box	140,000	60	79,100	Mar.	May	ACF
	139	Box	140,000	60	80,400	Apr.	May	ACF
	26	Box	200,000	50	73,300	July	Aug.	ACF
	114	Box	140,000	50	60,600	Oct.	Oct.	ACF
	100	Cov. Hopper	200,000	54-6	61,600	Nov.	Dec.	Bethlehem Steel
	36	Cov. Hopper	200,000	49-6	61,200	Feb.	Feb.	Pullman-Standard
	100	Cov. Hopper	200,000	32	56,000	July	Sept.	Bethlehem Steel
	8	Cov. Hopper	200,000	41-2	66,500	Aug.	Sept.	ACF
	900	Gondola	200,000	52	68,600	May	Dec.	Company Shops
	100	Gondola	140,000	65	76,700	Mar.	Mar.	Bethlehem Steel
Bangor & Aroostook	50	Mech. Refrig.	140,000	50-10	88,000	Apr.	Aug.	Pacific Car & Fndry.
Burlington Northern	235	Gondola	200,000	46-11 3/8	59,800	June	Sept.-Nov.	Thrall Car
	450	Box	140,000	50-6 7/16	68,000	June	1970-1971	ACF
	250	Cov. Hopper	200,000	54-6 9/16	62,300	Apr.	Sept.	Pullman-Standard
	200	Hopper	200,000	49-9	58,600	Jan.-Mar.	July-Aug.	Darby Corp.
	300	Hopper	200,000	49-8	59,000	Dec.	Mar. '71	Bethlehem Steel
	10	Cov. Hopper	200,000	34-9	57,300	Sept.	Oct.	ACF
	200	Cov. Hopper	200,000	34-8 3/4	56,000	Dec.	1st-2nd Qtr. '71	Pullman-Standard
	150	Wood Chip	200,000	59-6 1/2	68,200	Dec.	1st Qtr. '71	Gunderson
	400	Cov. Hopper	200,000	48-11	68,000	Dec.	2nd Qtr. '71	Gunderson
	50	Cabooses	....	30-0 1/4	....	Jan.-Feb.	Sept.-Oct.	International Car
	47	Cabooses	....	30-0 1/4	....	Dec.	2nd Qtr. '71	International Car
	50	Bulkhead Flat	140,000	56-8	67,000	Jan.	Aug.	Thrall Car
	50	Bulkhead Flat	200,000	45	82,400	Jan.	May	General Steel Ind.
	100	Ins. Box	140,000	50-2	80,300	Feb.	Aug.-Sept.	Pacific Car & Fndry.
	250	Cov. Hopper	200,000	49-9	62,000	June	July	ACF
	50	Cov. Hopper	200,000	54-7	60,700	Aug.	Sept.	Pullman-Standard
	25	Cov. Hopper	....	48-11	69,600	Feb.	Dec.	General American
Cambria & Indiana	15	Hopper	200,000	45	60,500	Jan.	May	Bethlehem Steel
	15	Hopper	200,000	45	59,770	Dec.	June '71	Bethlehem Steel
Chatahoochee Ind.	12	Pulpwood	140,000	50	56,000	Apr.	July	General Steel Industries
Chesapeake & Ohio	14	Box	200,000	60	83,600	Mar.	Mar.	ACF
	136	Box	140,000	60	80,100	Mar.	May	ACF
	83	Box	200,000	50	73,500	July	Aug.	ACF
	7	Box	200,000	86	112,100	Mar.	Mar.	Greenville Steel
	100	Cov. Hopper	200,000	39-8	59,600	May	June	ACF
	100	Cov. Hopper	200,000	54-6	59,600	May	May	ACF
	2000	Hopper	200,000	45	59,300	Mar.	Aug.	Company Shops
	1600	Hopper	200,000	45	58,200	Aug.	Jan. '71	Company Shops
	25	Gondola	140,000	65	77,200	Mar.	Mar.	Bethlehem Steel
	55	Caboose	....	30	....	June	Aug.	International Car
	2000	Hopper	200,000	45	59,700	Nov.	Feb.-May '71	Bethlehem Steel
	8	Cov. Hopper	200,000	53-3	68,800	Apr.	Aug.	ACF
	114	Box	140,000	50	56,500	Apr.	Oct.	ACF
	64	Box	140,000	60	69,500	May	Sept.-Oct.	ACF
	36	Box	200,000	60	73,500	May	Sept.-Oct.	ACF
Chicago & Illinois Midland	175	High Side Gondola	200,000	46-11 3/8	63,000	Jan.	May	Thrall Car
	200	High Side Gondola	200,000	46-11 3/8	63,000	Jan.	Jan. '71	Thrall Car
Chicago, Rock Island & Pacific	250	Cov. Hopper	200,000	49-7	59,200	Apr.	Aug.	Pullman-Standard
	350	Cov. Hopper	....	49-6 1/2	60,800	Mar.	Aug.-Sept '71	Pullman-Standard
	100	Box	160,000	50-6	58,800	Mar.	Sept. '71	ACF
	20	Cabooses	....	....	50,500	Mar.	Nov.	International Car
	3	Box	189,500	50-8 1/4	73,500	Jan.	Aug.	ACF
	1	Scale	....	34-9 1/2	100,000	Jan.	July	Maxson Corp.
C.I.T. Corp.	241	Flat	140,000	89-4	....	Sept.	Sept.	Bethlehem Steel
Cleveland Electric Illuminating Co.	295	High Side Gondola	216,000	47	47,000	June	1970-1971	Greenville Steel
Colorado & Southern	200	Hopper	200,000	49	62,000	Dec.	June '71	Gunderson, Inc.
Consolidation Coal Co.	32	High Side Gondola	200,000	49-6	57,700	Nov.	Feb.-Mar.'71	Greenville Steel
Corinth & Counce	6	Pulpwood	140,000	50	56,000	Oct.	Dec.	General Steel Industries
Delaware & Hudson	4	Flat	250,000	55	69,000	Apr.	Dec.	Bethlehem Steel
Denver & Rio Grande Western	100	Cov. Hopper	200,000	54-8	62,000	Nov.	June '71	Pullman-Standard
	250	Hopper	200,000	48	63,000	Nov.	June '71	Bethlehem Steel
	250	RBL Box	140,000	50-6	81,000	Oct.	May-June '71	Fruit Growers Express*
	15	Airslide Cov. Hopper	192,200	50-6	70,800	Nov.	1970-1971	General American*
	15	Flat	110,000	89-4	53,300	Mar.	July	ACF
Detroit & Toledo Shore Line	10	Box	200,000	60	73,500	Jan.	Apr.	ACF
	17	Box	140,000	60	69,500	Jan.	Apr.	ACF
Detroit Edison	152	Gondola	250,000	50-1	51,800	Apr.	Sept.	Fruehauf Railcar Div.
	142	Gondola	250,000	50-1	51,800	Aug.	Jan. '71	Fruehauf Railcar Div.

signaling statistics

Purchaser	No.	Type	Capacity	Length Ft. In.	Weight	Ordered	Delivery Date	Builder
Detroit, Toledo & Ironton	17	Hi-Cube Box	200,000	86-6	112,000	Nov.	Feb.-Mar.'71	Greenville Steel
Duluth, Missabe & Iron Range	9	Cov. Hopper	200,000	39-8	59,100	Apr.-May	May-June	ACF
E.I. DuPont de Nemours	30	Tank	....	...	....	Jan.	Aug.	General American
Elgin, Joliet & Eastern	200	Gondola	140,000	66	76,400	Oct.	1970-1971	Greenville Steel
	243	Hot Billet	200,000	48	67,000	Nov.	Mar.-June '71	Greenville Steel
	1	Coke Rack	140,000	58-9 1/2	70,000	Nov.	Jan. '71	Greenville Steel
Erie Lackawanna	130	Cov. Hopper	200,000	54-7	62,500	Apr.	July	Pullman-Standard
	10	Caboose	100,000	36-7	48,800	Feb.	Nov.	International Car
Ethyl Corp.	19	Cov. Hopper	200,000	57-7	69,900	June	Nov.	Pullman-Standard
Evans Products Co.	600	Ins. Box	140,000	52-5	60,000	May	2nd Qtr. '71	U.S. Rwy. Equip.
Fort Worth & Denver	3	Caboose	100,000	30	53,400	Dec.	Aug. '71	International Car
Fremont Elevator Co.	10	Cov. Hopper	200,000	54-7	60,600	Jan.	July	Pullman-Standard
Fruit Growers Express	300	RPL Box	200,000	57	97,300	Oct.	Mar.-Apr. '71	Company Shops
	25	RBL Box	200,000	50-6	85,800	Oct.	May-July '71	Company Shops
	553	RBL Box	140,000	50-6	79,600	Oct.	May-July '71	Company Shops
	300	RPL Box	200,000	57	97,300	Apr.	Sept.-Nov.	Company Shops
	107	RBL Box	140,000	50-6	79,600	Apr.	Nov.-Dec.	Company Shops
Grand Trunk Western	35	Box	140,000	50-6	76,400	Feb.	Sept.	Berwick Forge
	68	Flat	140,000	89-4	....	June	July	Bethlehem Steel
	3	Box	200,000	50	73,400	Jan.	Aug.	ACF
	74	Tri-level	179,200	89-4	55,300	Nov.	Dec.	Pullman-Standard
Granite Rock Co.	25	Hopper	200,000	34-3 1/2	54,000	Sept.	Dec.	Greenville Steel
Gulf, Mobile & Ohio	11	Caboose	100,000	30-1/4	51,700	Aug.	Dec.	International Car
Humble Pipe Line Co.	75	Cov. Hopper	200,000	57-7	69,800	July	Nov.	Pullman-Standard
Illinois Central	300	Cov. Hopper	....	...	....	Jan.	Apr.	Pullman-Standard
Koppers Co., Inc.	28	Tank	....	...	....	Apr.	Dec.	General American
Louisville & Nashville	1000	Hopper	140,000	42-10	52,000	July	Oct.-Dec.	Pullman-Standard
	35	Hi-Cube Box	140,000	86-6	112,000	Aug.	Feb. '71	Greenville Steel
	500	Hoppers	140,000	42-10	52,000	Dec.	Jan.-Feb. '71	Pullman-Standard
	300	Box	140,000	52-5	62,000	Dec.	Feb.-Mar. '71	Pullman-Standard
	45	Cov. Hopper	200,000	48-11	69,600	Dec.	Apr. '71	General American
	60	Box	140,000	60-6	64,000	Dec.	Apr. '71	Pullman-Standard
	400	Cov. Hopper	200,000	53-3	66,000	Dec.	May '71	ACF
	26	Flat	140,000	89-4	61,000	Aug.	Sept.	Bethlehem Steel
	100	Cov. Hopper	200,000	53-3	63,800	Mar.	June	ACF
Magma Cooper	18	Hopper	200,000	27-5	72,000	Apr.	Oct.	Gunderson, Inc.
Maine Central	250	Box	140,000	50	61,500	June	Aug.-Sept.	ACF*
Missouri Pacific	250	Box	140,000	50-6	62,600	Oct.	Mar. '71	ACF
	11	Box	200,000	50	65,500	Feb.	Aug.	ACF
	100	Cov. Hopper	200,000	49-9	64,700	Oct.	1971	ACF
	400	Box	140,000	50	61,500	Oct.	1971	ACF
Nogales Sidor.	11	Gondola	140,000	52-6	59,000	June	Oct.-Dec.	Bethlehem Steel
Norfolk & Western	7	Box	188,000	44-3	73,100	Jan.	Aug.	ACF
North American Car Corp.	583	Tank	200,000	...	....	Mar.-Nov.	Sept. '70-Dec. '71	Company Shops
	400	Hoppers	....	...	....	July	1970-1971	Company Shops
	25	Box	....	50-6	....	Mar.	July	Pacific Car & Fndry.
	2	Cov. Hopper	200,000	54-7	60,600	Apr.	July	Pullman-Standard
	4	Airslide Cov. Hopper	....	48-11	69,600	Oct.	July '71	General American
	200	Cov. Hopper	200,000	54-7	61,900	Nov.	Feb.-Apr. '71	Pullman-Standard
	10	Tank	....	...	....	Feb.	Apr.	Davies Shipbuilding
	48	Hopper	....	...	....	July	Sept.	Hawker Siddeley
	26	Tank	....	...	....	Oct.	1971	Procor Limited
Penn Central	121	Box	140,000	60	....	1970	Feb.-Mar.	Company Shops
	112	Box	140,000	60	....	1970	May-July	Company Shops
	154	Box	140,000	86	....	1970	Mar.-May	Company Shops
	55	Box	140,000	50	....	1970	Aug.-Sept.	Company Shops
	14	Box	200,000	50	....	1970	Aug.	Company Shops
	79	Box	140,000	60	....	1970	Nov.-Dec.	Company Shops
	16	Box	200,000	86	....	1970	Feb.	Greenville Steel
	50	Caboose	100,000	30	48,000	Sept.	Dec. '70-Feb. '71	International Car
Pennsylvania Power & Light Co.	131	Hopper	200,000	45	63,300	Dec.	Apr.-May '71	Bethlehem Steel
Phelps Dodge	45	Hopper	200,000	27-7	70,000	Oct.	Mar. '71	Gunderson, Inc.
Phillips Petroleum Co.	95	Tank	....	...	....	May	Nov.	General American
Pittsburgh Plate Glass Co.	7	Hi-Cube Box	200,000	86-6	112,000	Dec.	Feb. '71	Greenville Steel
Pullman Transport Leasing Co.	3	Ins. Box	200,000	60-1	96,000	Jan.	Apr.	Pullman-Standard
	200	Cov. Hopper	200,000	54-7	61,600	Feb.	July	Pullman-Standard
	103	Cov. Hopper	200,000	57-7	69,900	Mar.	Oct.	Pullman-Standard
	35	Cov. Hopper	200,000	54-7	62,000	Mar.	Apr.	Pullman-Standard
	300	Cov. Hopper	200,000	54-7	61,600	Apr.	July	Pullman-Standard
	76	Cov. Hopper	200,000	54-7	61,800	Apr.	June	Pullman-Standard
	50	Cov. Hopper	200,000	54-7	64,600	Apr.	June	Pullman-Standard
	500	Cov. Hopper	200,000	54-7	61,800	Apr.	Sept.-Oct	Pullman-Standard
	291	Cov. Hopper	200,000	54-7	61,800	June	June-Nov.	Pullman-Standard
	200	Cov. Hopper	200,000	57-7	69,800	Sept.	Dec.	Pullman-Standard
	50	Cov. Hopper	200,000	54-7	61,900	Sept.	Nov.-Dec.	Pullman-Standard
	20	Cov. Hopper	200,000	54-7	60,700	Oct.	Dec.	Pullman-Standard
	80	Cov. Hopper	250,000	50-5	....	Oct.	Mar. '71	Pullman-Standard
Reading	100	Cov. Hopper	200,000	41-0 9/16	62,500	Mar.	June-Aug.	Rydal Equipment Co.
	50	Coil	200,000	48	63,000	Mar.	Aug.	U.S. Railway Equip.
	10	Caboose	....	30-0 1/2	54,500	Mar.	Sept.	International Car
Richmond, Fredericksburg & Potomac	3	Caboose	100,000	30	51,500	Jan.	June	International Car
St. Louis-San Francisco	300	Box (XML)	140,000	50-6	61,000	Feb.	Aug.	Pullman-Standard
	100	Box (XML)	140,000	50-1	80,000	Dec.	May '71	ACF
	200	Cov. Hopper	200,000	49-7	62,000	Nov.	Mar. '71	Pullman-Standard
	7	Gondola	140,000	40	76,000	Mar.	Feb. '71	Difco, Inc.
Sandersville Railroad	50	Cov. Hopper	200,000	45-5	65,100	Sept.	Dec.	Pullman-Standard

*Leased.

1970 FREIGHT-TRAIN CAR ORDERS

Purchaser	No.	Type	Capacity	Length Ft. In.	Weight	Ordered	Delivery Date	Builder
Seaboard Coast Line	700	Box	154,000	50-6	61,500	Feb.	Nov.	Pullman-Standard
	300	Box	154,000	50-6	65,400	Feb.	Dec.	Pullman-Standard
	500	Pulpwood	154,000	45-2	56,100	Feb.	Dec.	General Steel Industries
	500	Gondola	154,000	52-6	57,500	Mar.	Oct.	Bethlehem Steel
	300	Cov. Hopper	200,000	54-6	61,400	June	Nov.	Pullman-Standard
Soo Line	300	Cov. Hopper	200,000	54-3	63,900	....	Jan.-Apr.	Thrall Car
Southern	10	Box	140,000	86-6	113,000	Sept.	Feb. '71	Greenville Steel
	800	Box	140,000	50-6	64,100	Oct.	Jan. '71	Pullman-Standard
	400	Box	140,000	50-6	65,000	Oct.	Jan. '71	Pullman-Standard
	300	Gondolas	140,000	65-6	72,500	Dec.	Feb. '71	Berwick Forge
	600	Hoppers	200,000	50-11 1/4	65,000	Nov.	May '71	Greenville Steel
	100	Ballast	200,000	38	....	Dec.	Mar. '71	Thrall Car
	600	Hopper	200,000	40-2	55,500	Dec.	Apr. '71	ACF
	4	Dep. Cent. Flat	232,000	77-4	162,000	Feb.	Dec.	Berwick Forge
	1	Well	200,000	51-10	70,000	Feb.	Oct.	Berwick Forge
	250	Woodchip Hopper	200,000	70-10	84,000	May	Sept.-Nov.	Greenville Steel
	16	Hi-Cube Box	200,000	86-6	....	Sept.	Feb. '71	Greenville Steel
	36	Flat	140,000	89-4	61,000	Aug.	Aug.-Sept.	Bethlehem Steel
	8	Box	200,000	50	65,500	May	Aug.	ACF
	23	Flat	140,000	89-4	51,500	Aug.	Aug.	ACF
Southern Pacific	500	Box	140,000	50-7	70,000	May	Oct.	Gunderson, Inc.
	500	Box	140,000	50-7	58,000	June	Dec.	Gunderson, Inc.
	500	Box	140,000	50-7	58,000	Nov.	Jan. '71	Gunderson, Inc.
	15	Box	100,000	50	61,000	July	Aug.	ACF
State of Washington	1	Scale Test Car	....	40	100,000	Apr.	Aug.	Gunderson, Inc.
Texas & Pacific	150	Box	140,000	50-6	65,950	Oct.	Mar. '71	ACF
	100	Cov. Hopper	200,000	49-9 1/8	62,900	Oct.	Mar. '71	ACF
Trailer Train	137	Flat	150,000	89-4	66,000	Feb.	Mar.	ACF
	97	Flat	150,000	89-4	66,000	Feb.-Mar.	Mar.-Apr.	Bethlehem Steel
	105	Flat	180,000	68	83,000	Mar.	Apr.	Bethlehem Steel
	117	Flat	150,000	89-4	66,000	Feb.-Mar.	Mar.-Apr.	Pullman-Standard
	50	Flat	150,000	89-4	70,000	Feb.	Mar.	ACF
	13	Flat	150,000	89-4	66,000	Feb.	Mar.	ACF
	151	Flat	150,000	89-4	....	Feb.	Mar.	Bethlehem Steel
	50	Flat	150,000	89-4	62,000	Feb.	Mar.	Pullman-Standard
	8	Flat	150,000	60	70,000	Feb.	Mar.	Pullman-Standard
	83	Flat	150,000	89-4	66,000	Feb.	Mar.	Pullman-Standard
	47	Flat	150,000	89-4	64,000	June	July	ACF
	43	Flat	120,000	89-4	62,000	June	July	ACF
	411	Flat	150,000	89-4	....	May-June	June-July	Bethlehem Steel
	222	Flat	150,000	89-4	....	Apr.-May	May-June	Pullman-Standard
	6	Flat	120,000	89-4	62,000	May	June	Pullman-Standard
	14	Flat	120,000	89-4	62,000	June	July	ACF
	250	Flat	150,000	89-4	....	June-July	July-Aug.	Bethlehem Steel
	76	Flat	150,000	89-4	66,000	June	July	Pullman-Standard
	50	Flat	120,000	89-4	62,000	June	July	Pullman-Standard
	211	Flat	150,000	89-4	62,000	June	July	Pullman-Standard
	177	Flat	150,000	89-4	....	Sept.	Oct.	ACF
	84	Flat	120,000	89-4	62,000	Sept.	Oct.	ACF
	241	Flat	150,000	89-4	....	Sept.	Oct.	Bethlehem Steel
	327	Flat	150,000	89-4	....	Sept.	Oct.	Pullman-Standard
	54	Flat	120,000	89-4	62,000	Aug.	Sept.	Pullman-Standard
	67	Flat	150,000	89-4	62,000	Aug.	Sept.	Bethlehem Steel
	44	Flat	120,000	89-4	62,000	Oct.	Nov.	ACF
	131	Flat	150,000	89-4	....	Oct.-Nov.	Nov.-Dec.	ACF
	228	Flat	150,000	89-4	62,000	Nov.	Nov.-Dec.	Bethlehem Steel
	20	Flat	188,000	68	75,000	Nov.	Dec.	Bethlehem Steel
	25	Flat	185,000	68	78,000	Nov.	Dec.	Bethlehem Steel
	37	Flat	150,000	89-4	....	Nov.	Dec.	Pullman-Standard
	139	Flat	120,000	89-4	62,000	Nov.	Dec.	Pullman-Standard
	26	Flat	150,000	89-4	62,000	Oct.	Nov.	Bethlehem Steel
	93	Flat	150,000	89-4	62,000	Oct.	Nov.	Pullman-Standard
	40	Flat	....	...	....	....	....	Bethlehem Steel
	41	Flat	150,000	89-4	61,200	Dec.	Jan. '71	Pullman-Standard
Union Carbide Corp.	75	Tank	....	...	....	Jan.	1970-1971	General American
Union Pacific	300	Ins. Box	200,000	51-8	....	Mar.	Aug.-Oct.	Pullman-Standard
	100	Box	140,000	50-6	....	Mar.	Sept.	ACF
	100	Cov. Hopper	200,000	49-7	59,200	Mar.	Aug.	Pullman-Standard
	20	Caboose	....	...	....	Mar.	Nov.-Dec.	International Car
	200	Hopper	200,000	...	....	Nov.	Jan.-Mar. '71	Bethlehem Steel
	50	Airslide Cov. Hopper	200,000	...	....	Nov.	Jan.-Feb. '71	General American
	600	Cov. Hopper	200,000	54-7	61,900	Nov.	Jan.-Mar. '71	Pullman-Standard
	8	Gondola	100,000	89	....	Dec.	Apr.-June '71	Maxson Corp.
	100	Box	200,000	51-8	....	Dec.	Aug.-Dec. '71	Company Shops
	1000	Box	140,000	50-6	....	Dec.	Jan.-Dec. '71	Company Shops
U.S. A.M.E.C.	6	Dep. Cent. Flat	280,000	58-4	130,000	Nov.	Mar.-Apr. '71	General Steel
	4	Dep. Cent. Flat	280,000	58-4	129,000	June	Aug.-Oct.	General Steel
U.S. Leasing International, Inc.	25	Cov. Hopper	....	29-6	54,700	May	Aug.	General American
Various	150	Coil	200,000	55	65,000	Apr.	Sept.	U.S. Rwy. Equip.
	2,140	Tank	....	...	....	....	....	Various
	206	Cov. Hopper	....	...	....	1970	1970-1971	ACF
	123	Tank	....	...	....	1970	1970-1971	ACF
	1,661	Cov. Hopper	....	...	....	1970	1970-1971	ACF
	1,342	Tank	....	...	....	1970	1970-1971	ACF
	54	Tank	....	...	....	Jan.-Dec.	1970-1971	General American
	22	Double Deck Stock	143,000	85-3-3/4	119,100	July	Aug.-Oct.	Ortner Freight Car
	136	Wood Chip Gondola	185,000	59-6	74,000	Oct.	1st Qtr. '71	Ortner Freight Car
	255	Rapid Discharge Hopper	200,000	50-2	....	1970	2nd Qtr. '71	Ortner Freight Car
	499	Tank	200,000	...	....	Jan.-Nov.	Mar. '70-Apr. '71	Richmond Tank Car Co.
	126	Hopper	140,000	50-11	61,000	Feb.-June	Oct.-Nov.	Thrall Car
	2	Flat	600,000	35-11	158,200	Feb.	Sept.	Thrall Car
	1	Dep. Cent. Flat	250,000	21	167,000	Apr.	Dec.	Thrall Car
	4	Dep. Cent. Flat	400,000	25	188,000	Aug.	Mar.-May '71	Thrall Car
	536	Gondola	200,000	...	....	Jan.-Oct.	1970-1971	Thrall Car
Western Pacific	50	Hopper	200,000	38-8	60,000	Mar.	Oct.	Darby Corp.
	15	Gondola	200,000	65-6	80,000	Mar.	Sept.	Maxson Corp.
	13	Ins. Box	200,000	60-1	99,500	Apr.	July	Pullman-Standard

1970 FREIGHT-TRAIN CAR ORDERS—CANADA

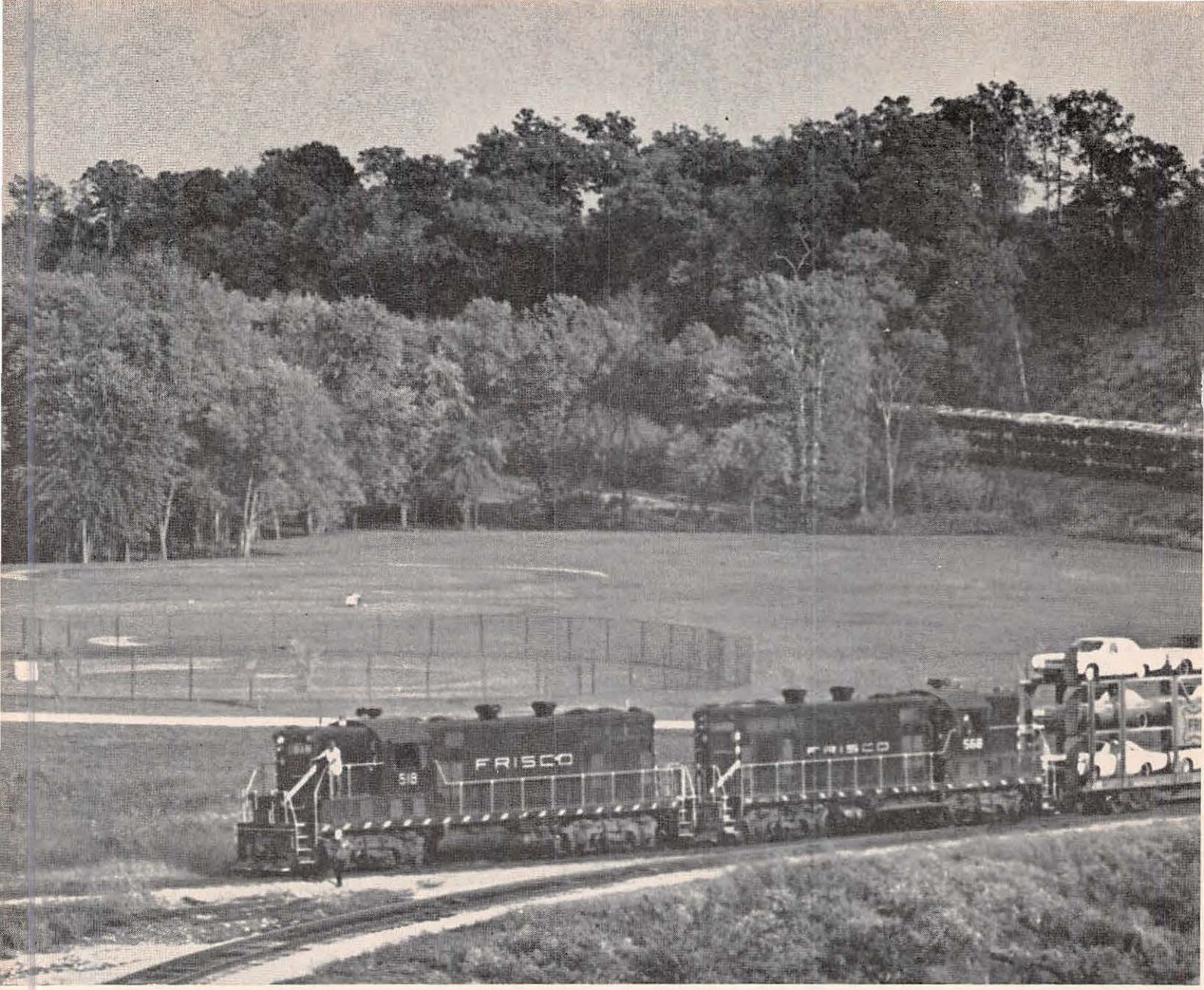
Purchaser	No.	Type	Capacity	Length Ft. In.	Weight	Ordered	Delivery Date	Builder
Canadian National	150	Flats	100,000	63	50,000	Jan.	Sept.-Nov.	IEC-Holden, Ltd.
	1000	Bulkhead Flats	140,000	51-6	63,000	Jan.	July-Nov.	Marine Industries

Purchaser	No.	Type	Capacity	Length Ft. In.	Weight	Ordered	Delivery Date	Builder
	1500	Cov. Hopper	200,000	47-11	61,000	June	1970-1971	National Steel Car
	235	Flats	140,000	82	60,000	Aug.	Feb.-Mar. '71	Hawker Siddeley
	400	Box	140,000	50-6	60,000	Oct.	Apr.-July '71	National Steel Car
	35	Box	140,000	50-6	76,500	Feb.	Sept.	Berwick Forge
Canadian General Transit Co.	297	Tank	....	...	....	Jan.-Dec.	1970-1971	Hawker Siddeley
Canadian Pacific	46	Flat	166,100	56-6	53,900	Apr.	Apr.-May	IEC-Holden, Ltd.
	80	Bulkhead Flat	197,900	60-10	65,100	Mar.	Aug.-Oct.	Hawker-Siddeley
	200	Ore	170,000	25-11	50,000	Aug.	1970-1971	Hawker Siddeley
	200	Flat	202,900	81-2	60,100	Oct.	Feb.-Apr. '71	Hawker Siddeley
	600	Bulkhead Flat	158,800	51-6	61,200	Nov.	Apr.-June '71	National Steel Car
	50	Caboose	....	32-11	54,000	Oct.	Jan.-Mar. '71	Company Shops
	50	Caboose	....	32-11	54,000	Feb.	Oct.-Nov.	Company Shops
	7	Box	150,000	86-6	113,000	Aug.	Feb. '71	Greenville Steel*
	6	Flat	153,800	89-4	66,200	Feb.	Apr.	Bethlehem Steel*
	5	Flat	156,000	89-4	64,000	June	July	Bethlehem Steel*
Ontario Northland	72	Hopper	200,000	40-6	56,000	Oct.	Apr. '71	National Steel Car
Pacific Great Eastern	130	Wood Chip	165,000	61-7	55,000	Feb.	May-June	National Steel Car
	10	Wood Chip	165,000	61-7	55,000	Apr.	June	National Steel Car
Procor, Ltd.	6	Flat	140,000	89-4	66,700	Feb.	Apr.	Bethlehem Steel

1970 LOCOMOTIVE ORDERS

Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horsepower	Order Date	Delivery Date	Builder
Ashley, Drew & Northern	1	B-B	Sw.	230,000	1,000	...	May	EMD
Aluminum Company of America	1	B-B	Sw.	250,000	1,500	...	June	EMD
Apalachicola Northern	4	B-B	Sw.	250,000	1,500	...	Aug.	EMD
Atchison, Topeka & Santa Fe	105	...	Frt.	....	...	...	.....	EMD*
Atlanta & St. Andrews Bay	1	B-B	Rd. Sw.	265,000	2,300	...	July	EMD
Baltimore & Ohio	3	B-B	Gen. Pur.	277,500	2,000	Apr.	Aug.-Dec.	EMD
	20	B-B	Gen. Pur.	277,500	3,000	Apr.	1970-1971	EMD
	15	B-B	Gen. Pur.	277,500	3,000	Aug.	Feb.-Mar. '71	EMD
Birmingham Southern	1	B-B	Sw.	247,000	1,000	July	Jan. '71	EMD
Burlington Northern	9	C-C	Rd. Sw.	390,000	3,300	July	3rd Qtr. '71	General Electric
	10	C-C	Rd. Sw.	390,000	3,300	...	1st. Qtr. '71	General Electric
	15	C-C	Frt.	387,000	3,300	Aug.	Feb.-July '71	General Electric
	45	C-C	Frt.	385,000	3,600	July	May-Aug. '71	EMD
	20	C-C	Frt.	385,000	3,600	July	Apr.-May '71	EMD
	20	C-C	Frt.	387,000	3,300	Dec.	Aug.-Sept. '71	General Electric
Chesapeake & Ohio	10	B-B	Gen. Pur.	277,500	2,000	Apr.	July-Aug.	EMD
	20	C-C	Gen. Pur.	396,000	3,000	Apr.	June-July	EMD
	10	C-C	Gen. Pur.	396,000	3,000	Aug.	Feb.-Mar. '71	EMD
Chicago, Rock Island & Pacific	20	...	Gen. Pur.	256,000	3,000	Mar.	Apr.	EMD
Clinchfield	10	C-C	Frt.	390,000	3,000	Nov.	June '71	EMD
Delaware & Hudson	9	C-C	Frt.	390,000	3,300	Aug.	Sept.-Dec.	General Electric
Detroit Edison	6	C-C	Rd. Sw.	390,000	3,000	...	1972	General Electric
	6	B-B	Rd. Sw.	400,000	3,000	...	Apr.	EMD
Detroit, Toledo & Ironton	8	B-B	Gen. Pur.	263,000	2,000	Feb.	June	EMD
Duluth, Missabe & Iron Range	8	...	Rd.	387,000	2,000	Sept.	Mar.-May	EMD
Erie Lackawanna	15	C-C	Rd.	388,500	3,600	May	July-Aug.	EMD
Florida East Coast	10	B-B	Gen. Pur.	265,000	3,000	Apr.	Jan.-Mar. '71	EMD
Grand Trunk Western	9	...	Rd. Sw.	....	3,000	May	Sept.	EMD
	12	...	Rd. Sw.	....	2,000	Nov.	Feb. '72	EMD
Gulf, Mobile & Ohio	12	B-B	Frt.	254,000	2,000	July	Mar.-May '71	EMD
Howe Coal Co.	1	B-B	Sw.	250,000	1,500	...	June	EMD
Indiana Harbor Belt	5	B-B	Sw.	250,000	1,500	...	Nov.	EMD
Kansas City Southern	6	C-C	Rd. Sw.	400,000	3,000	...	May	EMD
	1	B-B	Rd. Sw.	250,000	1,500	...	June	EMD
Kennecott Copper	2	B-B	Rd. Sw.	297,500	2,300	...	June	EMD
Kentucky & Indiana Terminal	5	...	Sw.	248,000	1,500	Aug.	Mar. '71	EMD
Lake Superior & Ishpeming	2	C-C	Gen. Pur.	360,000	2,250	Mar.	Nov.	General Electric
Louisville & Nashville	20	C-C	Frt.	378,000	3,000	Apr.	Apr.-June '71	General Electric
	10	C-C	Frt.	380,000	3,000	Dec.	May '71	EMD
	30	B-B	Gen. Pur.	260,000	2,000	Dec.	May-June '71	EMD
	10	B-B	Sw.	253,000	1,500	Apr.	Nov. '71	EMD
Missouri Pacific	20	C-C	Frt.	368,000	3,000	Oct.	Mar. '71	EMD
	5	C-C	Frt.	363,000	3,000	Oct.	Sept. '71	General Electric
Minnesota Transfer	2	B-B	Sw.	250,000	1,500	...	May	EMD
Norfolk & Western	25	B-B	Gen. Pur.	280,000	3,000	Nov.	1971	General Electric
	15	C-C	Gen. Pur.	396,000	3,000	Nov.	1971	EMD
	60	B-B	Gen. Pur.	273,000	2,000	Nov.	1971	EMD
Penn Central	15	B-B	Frt.	277,000	3,300	Mar.	May-Aug.	General Electric
	45	C-C	Frt.	391,000	3,000	May	1970-1971	EMD
	77	B-B	Gen. Pur.	264,000	2,000	May	1970-1971	EMD
	15	B-B	Sw.	248,000	1,500	May	1970-1971	EMD
Pittsburgh & Lake Erie	5	B-B	Sw.	250,000	1,500	...	Dec.	EMD
Roscoe, Snyder & Pacific	1	B-B	Sw.	250,000	1,500	...	June	EMD
St. Louis-San Francisco	30	B-B	Frt.	253,000	2,000	Aug.	Feb.-Apr. '71	EMD
Sandersville Railroad	1	B-B	Sw.	250,000	1,500	...	May	EMD
Seaboard Coast Line	36	B-B	Frt.	269,000	3,600	Nov.	Nov. '71	General Electric
	21	B-B	Frt.	263,700	3,600	Nov.	Oct. '71	EMD
	10	...	MATE	270,000	....	July	Oct. '71	General Electric
	21	B-B	Frt.	269,000	3,600	Nov.	Nov. '71	General Electric
Southern	16	...	Frt.	368,000	3,000	Nov.	Apr. '71	EMD
	56	...	Frt.	250,000	2,000	Nov.	May-Oct. '71	EMD
State of New Jersey	17	C-C	Rd. Sw.	392,000	3,400	Feb.	1971	General Electric
Tennessee Copper	1	B-B	Sw.	250,000	1,500	...	May	EMD
Texas Mexican	1	...	Rd. Sw.	250,000	2,000	June	July '71	EMD
Toledo, Peoria & Western	2	B-B	Sw.	250,000	1,500	...	May	EMD
Union Pacific	20	...	Frt.	....	3,000	Mar.	Mar.-Apr.	EMD
	40	...	Frt.	....	3,000	Nov.	June-Sept. '71	EMD
U.S. Steel	2	B-B	Sw.	230,000	1,000	...	Mar.	EMD

*Acquired in 1970



The train idea in a nutshell: 1 "driver"

Can America's shippers save it?

Anyone who looks into America's double-the-population, triple-the-production future and doesn't see that much of its volume and efficiency must ride on the rails is looking through the wrong end of the telescope. Consider . . .

Today, some of our best brains are struggling to develop guidance systems for cars and trucks.

Buried electronic guidelines? Guiding trolleys? Strips? *Guided movement is built into the railroads with the very rails they ride on.*

Other best brains struggle to un-glut highways . . .

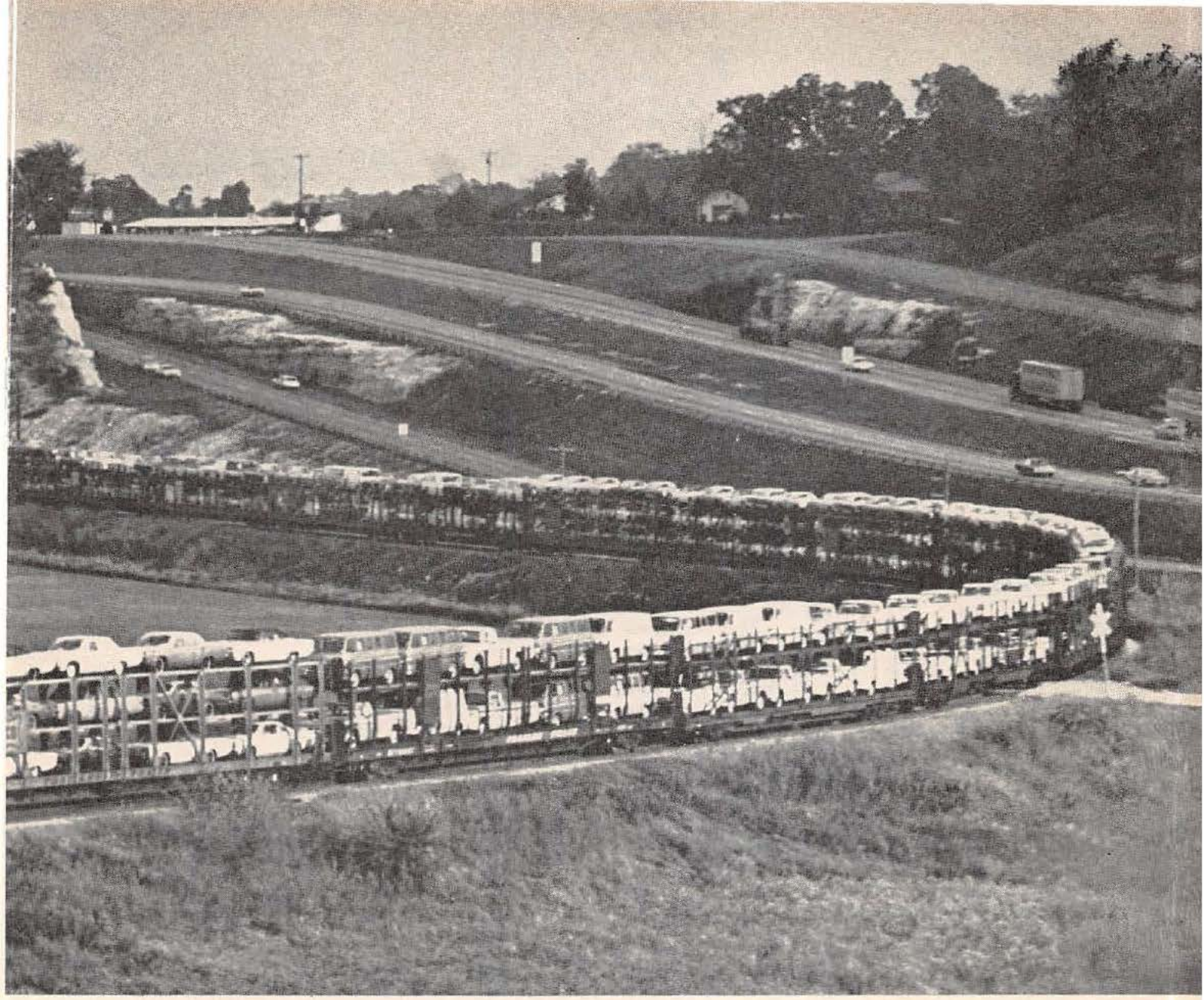
Car pools? *The train is the biggest car pool ever invented.*

Wider highways? *A single track of a double-track railroad can carry the load of an estimated 10- to 20-lane highway, if you can imagine such a monster.*

Safety? Controls to keep a stream of autos and trucks the right distance apart? *The coupled cars of a train can't run into each other. And railroad signal systems have long assured proper train spacing.*

Greater efficiency? *There are 11 drivers operating the 8 cars and 3 trucks visible on the highway above. One "driver" is operating the train.*

Greater economy? *For all its fantastically heavier load of 1,800 cars, the train pictured above is probably operating on only about four times the fuel used by*



for 1,800 automobiles.

the 3 trucks and 8 cars.

Minimum pollution? *Vastly less fuel consumption per work unit means vastly less exhaust emission.*

Truly, the train idea is the idea of the future. But does the train have any future at all?

America's railroads are crushingly over-regulated . . . are still punished for sins of monopoly (which "monopoly" ended long ago with the advent of truck, automobile, waterway and airplane)...have paid their own way 100% (while competitive modes have had lavish government endowment in terms of substantially free roads, airports, canals, supporting systems) . . . are themselves starved for needed capital improvements.

All America has a stake in the future of the railroads. But only America's shippers are close enough to the problem to know how desperately the railroads are boxed in today, how much they are needed.

How vital it is that shippers and their employes—through their congressmen, state legislators and national and local officials—bring America's best thinking to solving the railroad crisis!

The ASTRO program deserves every shipper's most careful consideration and his support. If you would like this magazine's ideas on the form this support might take, send for a copy of "Getting ASTRO Off the Ground."

RAILWAY AGE, 350 Broadway, NYC 10013.

Help get ASTRO off the ground.

For name and address of your local ASTRO committeeman, contact Don Martin, ASTRO, 1920 "L" St., N.W., Wash., D.C. 20036.

1970 LOCOMOTIVE ORDERS

Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horsepower	Order Date	Delivery Date	Builder
Western Pacific	10	B-B	Frt.	276,000	3,000	Mar.	Aug.	EMD
	2	B-B	Frt.	284,000	3,000	Nov.	May '71	General Electric
	18	B-B	Frt.	276,000	3,000	Nov.	Oct. '71	EMD

1970 LOCOMOTIVE ORDERS—CANADIAN DOMESTIC

Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horse-Power	Order Date	Deliver Date	Builder
British Columbia Hydro & Power Authority	1	C-C	Gen. Pur.	386,500	2,000	Oct.	Oct. '71	Diesel Div., General Motors of Canada
Canadian National	50	...	Rd. Sw.	387,000	3,000	July	Apr.-Dec. '71	Diesel Div., General Motors of Canada
	20	...	Rd. Sw.	....	3,600	July	Jan.-Apr. '71	MLW-Worthington
Canadian Pacific	15	B-B	Gen. Pur.	260,000	2,000	Apr.	Feb.-Apr. '71	Diesel Div., General Motors of Canada
Iron Ore Company	3	B-B	Gen. Pur.	260,000	1,200	Dec.	Oct. '71	Diesel Div., General Motors of Canada
Pacific Great Eastern	5	...	Frt.	380,000	3,000	Feb.	Dec.	MLW-Worthington
Quebec, North Shore & Labrador	15	C-C	Gen. Pur.	280,000	3,000	Nov.	Apr. '71	Diesel Div., General Motors of Canada*
Roberval & Saguenay	2	B-B	Rd. Sw.	260,000	2,000	Oct.	May '71	MLW-Worthington

*Leased

1970 LOCOMOTIVE ORDERS—FOREIGN

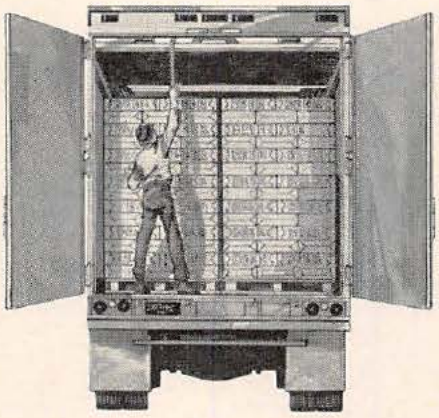
Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horsepower	Order Date	Delivery Date	Builder
Algeria-SNCFA	29	C-C	Gen. Pur.	256,000	3,000	Aug.	June '71	EMD
Brasil-CVRD	10	D-D	Gen. Pur.	357,000	3,600	Aug.	Mar. '71	EMD
Chile-A&B	1	C-C	Gen. Pur.	179,000	1,500	Aug.	Apr. '71	EMD
Comilog-Gabon	8	C-C	Frt.	210,000	1,500	Jan.-Sept.	1970-1971	General Electric
Congo	23	C-C	Frt.	210,000	1,500	Jan.	1st Qtr. '71	General Electric
East African Railway	15	1-C-C-1	Gen. Pur.	244,400	2,400	July	May-Aug. '71	MLW-Worthington
	20	1-C-C-1	Gen. Pur.	235,000	1,880	July	Aug.-Nov. '71	MLW-Worthington
Guinea-CBG	6	C-C	Gen. Pur.	368,000	3,000	Oct.	Jan. '72	EMD
	4	B-B	Sw.	230,000	1,000	Oct.	Jan. '72	EMD
Honduras-Standard Fruit	3	B-B	Frt.	110,000	640	Aug.	1971	General Electric
Indonesia-ISR	5	B-B	Gen. Pur.	134,000	1,000	Jan.	Mar. '71	EMD
Iran-ISR	51	C-C	Gen. Pur.	256,000	3,000	July	Apr. '71	EMD
Israel-ISR	2	B-B	Gen. Pur.	194,000	2,000	Sept.	Mar. '71	EMD
Jamaica-Kaiser Bauxite	1	C-C	Gen. Pur.	360,000	2,000	Sept.	June '72	EMD
Jamaica Railway	6	B-B	Rd. Sw.	149,100	950	Nov.	May '71	MLW-Worthington
Korea-KNR	50	C-C	Gen. Pur.	256,000	3,000	Aug.	Apr. '71	EMD
Korea-Korea Cement	8	B-B	Sw.	230,000	1,000	Apr.	Jan. '71	EMD
Mexico-Ferrocarril Del Pacifico	4	C-C	Frt.	390,000	3,000	Aug.	1971	General Electric
Mexico-Altos Hornos	2	B-B	Gen. Pur.	250,000	2,000	July	July '71	EMD
Mexico-Celulosa	1	B-B	Sw.	230,000	1,000	June	July '71	EMD
Mexico-Cem. Anahuac	1	B-B	Sw.	230,000	1,000	Apr.	Apr. '71	EMD
New Zealand Railway	15	C-C	Frt.	220,000	2,600	Sept.	1971	General Electric
South Africa-SAR	50	C-C	Gen. Pur.	242,000	3,000	Nov.	July '71	EMD
	75	C-C	Frt.	248,000	2,600	June	1971-1973	General Electric
	50	C-C	Frt.	248,000	2,600	Oct.	1971-1973	General Electric
Venezuela-Orinoco	4	C-C	Gen. Pur	360,000	2,000	Apr.	Aug.	EMD
Yugoslavia	2	C-C	Gen. Pur.	236,000	1,800	Apr.	Jan. '71	Diesel Div., General Motors of Canada
Yugoslavia-JZ	2	C-C	Gen. Pur.	217,000	2,000	Jan.	Jan. '71	Diesel Division, General Motors of Canada
Zambia-ZR	23	C-C	Frt.	220,000	2,000	Mar.	1971	General Electric

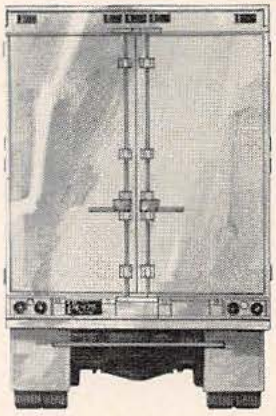
RAILROAD COMMUNICATIONS INSTALLED IN 1970

Railroad	Radio Units	Intercommunications: No. of Systems	Intercommunications: Loudspeakers & Telephones	Channelizing Equipment: Carrier Units Terms. & Rep.	Channelizing Equipment: Data Moderns	Telephone: Exchanges	Telephone: Stations Available	Computer I/O unit	ACI Scanners	Microwave Stations
A&WP	26	—	—	—	—	—	—	—	—	—
BAR	12	—	—	—	—	—	1	—	—	—
B&LE	13	1	10	—	—	—	—	—	—	—
BN	220	5	79	68	69	5	375	40	6	—
CN	588	18	119	2,266	328	9	500	2,794	—	218
CP Rail	—	—	—	—	—	—	—	—	1	—
C&O	278	2	15	12	8	1	150	34	—	—
B&O	178	3	24	18	12	2	300	26	6	—
C&NW	—	—	—	—	18	—	—	20	—	—
CTA	12	8	242	—	—	—	—	—	—	—
Clinchfield	5	—	—	—	—	—	—	1	—	—
D&H	6	—	—	—	—	—	—	—	—	—
D&RGW	2	—	—	—	—	—	—	—	—	—
DT&I	4	—	—	—	—	—	—	—	1	—
DM&IR	7	—	—	—	—	1	50	—	—	—
EJ&E	145	1	—	—	—	—	—	—	—	—
EL	34	1	10	—	—	—	—	—	—	6
FEC	—	—	—	—	1	—	—	2	1	—
Frisco	90	1	6	—	—	—	—	14	—	—
GM&O	57	—	—	11	—	1	40	—	—	13
IC	510	4	44	100	26	1	100	5	8	—
L&HR	2	—	—	—	—	—	—	—	—	—
LV	—	—	—	—	—	—	—	4	—	—
LI	356	1	640	14	17	—	—	—	—	—
L&N	125	25	40	95	—	1	50	321	2	—
MeC	14	—	—	—	—	—	—	—	—	—
MBTA	170	—	—	—	—	—	—	—	—	—

(continued on page 106)

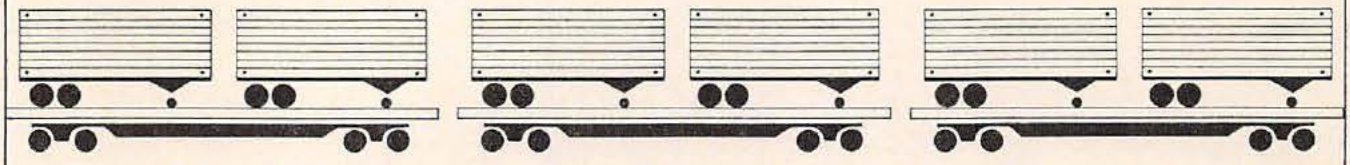
New Camus I™ gives you Memory Control Cargo Control.





You can't close doors

until it's in place!



The New Aeroquip barrier automatically advances to hold retreating loads and prevents voids in the cargo.

The new CAMUS I (Captive Adjustable Must Use System) is designed to store in the roof of the trailer for unhindered loading. When loading has been completed, the trailer doors cannot be closed until the barrier is down.

Using the CAMUS I barrier is as easy as closing the trailer doors. By grasping a strap, the device is pulled out and down from the roof (shown in photo at right), then advanced to the face of the cargo. The barrier automatically locks in position, providing rigid confinement against rearward movement of cargo. Should the load retreat from the barrier during transit, the barrier follows and maintains its rigid confinement of the cargo. Using CAMUS I reduces the need for disposable dunnage and eliminates the need of shoring beams, plywood, gates or for stepping down of the load. For more complete information, write for Bulletin CCB-18, Aeroquip Corporation, Industrial Division, Jackson, Michigan 49203, subsidiary of Libbey-Owens-Ford Company.

Aeroquip products are protected by patents internationally.

Aeroquip CAMUS I was carefully engineered to make raising and lowering simple and effortless.

Aeroquip

INDUSTRIAL DIVISION

Circle 30 on coupon page 91

This double blower wheel is why today's GM locomotive is even more reliable.

This double wheel permitted our engineers to design a new and simplified ventilation system for the main generator and traction motors on production road locomotives.

The system uses a single housing and extruded aluminum air foil blades in the blower wheel. This gives you more air flow, increased reliability and maintainability.

This new blower assembly is metallurgically stronger, more dimensionally stable and easier to inspect and balance. It's shallower to reduce cantilever stress. And you can remove and replace it without special alignment fixtures.

Circle 31 on coupon page 91

Our new blower is just one more example of the things we're doing to make your next GM locomotive even more reliable and easier to maintain.

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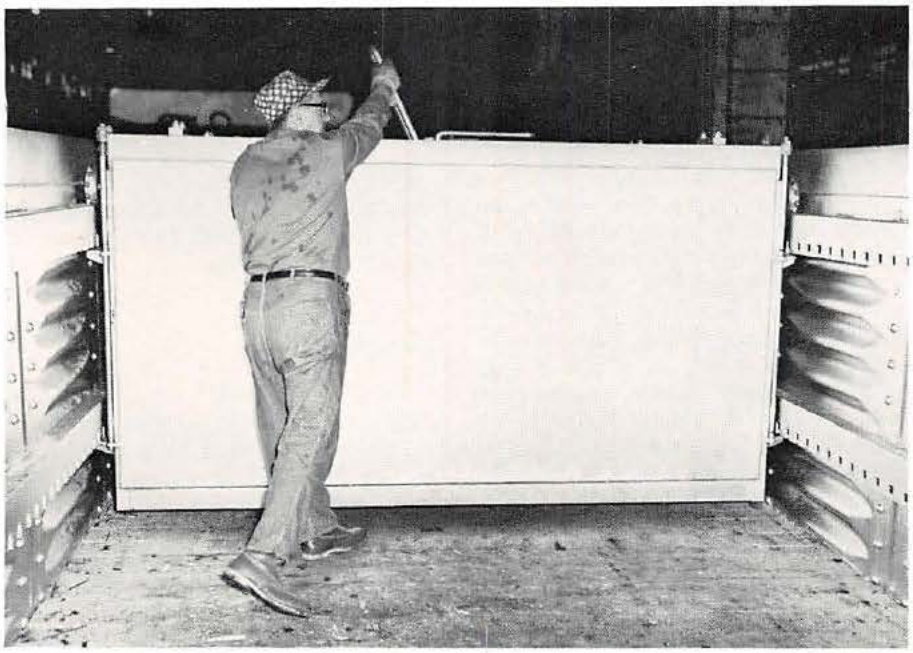
Electro-Motive Division
La Grange, Illinois

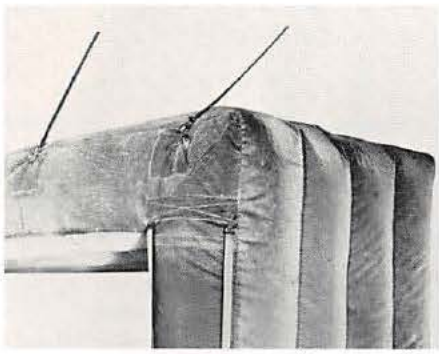
New Products Report



New bulkhead can be positioned by one man (RA-1)

The Automatic Locking Bulkhead for gondola steel service has been announced as an innovation in technical design. The bulkhead, of channel frame work and steel cover sheets, is 9 inches thick, providing a yield strength of 83,000 lb and ultimate strength of 115,000 lb. The strengths have been confirmed by tests, with loads evenly applied along the vertical center line of the bulkhead.

The locking mechanism, which has eliminated the use of spring or tension systems, operates four double lock blocks on the principle of gravity. Each lock block shifts into place upon the release of the operating handle housed in the top channel of the bulkhead, and allows placement of bulkheads at one-inch increments. This design utilizes only two channel-type belt rails per side, incorporating the functions of a vertical support-guide rail and a locking rail into the top belt rail. This system provides substantial savings in application costs. The bulkheads, easily positioned by one man, are already being used by several steel producers. *Stanray Corp.*



Dock enclosure (RA-2)

The VRS^2 Airlocke dock seal, a rail siding dock enclosure, permits adjustment of seal height from 9 ft 9 in. to 10 ft 9 in. It is raised or lowered by means of two straps on either side and accommodates railcars with full-size and under-size door openings. The square-cornered, quickly inflated seals are made of neoprene coated nylon fabric. They form a tight, self-supporting shelter between car and dock; give access to the full width of a 10-ft-wide door; provide a degree of climate control by helping to maintain the temperature of the docking facility; help keep storage areas clean and dry; and help in reducing pilferage.

Low-volume air pressure is supplied by a blower mounted inside building. When not in use, seals are suspended against the side of the building. Seals can be custom-tailored to individual specifications. *Airlocke Dock Seal.*

Structural panels (RA-3)

A lightweight honeycomb sandwich material enclosed in fiberglass-reinforced polyester resin is available in

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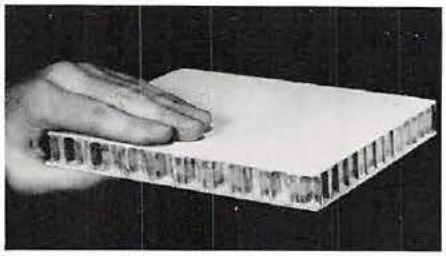

lightweight panels which combine both strength and thermal insulating qualities. This FRP Honeycomb in the form of 7/8-inch panels has been used in containers and trailer bodies where weight savings of up to 1,500 pounds per unit are possible, along with an increase of 5% in volume because of the simplified assembly techniques which are possible.

The honeycomb is a phenolic-impregnated paper which has a crush strength of over 300 psi and is formed into the cellular structure in special fabricating machines. Panel thickness varies from 1/2 to 24 inches. Glass roving in the polyester skin adds strength and puncture resistance. *Panel/Comb Industries.*

Pallet conveyor (RA-4)

The new Hold/Flo conveyor system combines capacities for high speed powered conveying, accumulation and controlled speed gravity conveying. It can handle standard wood pallets with bottom boards in any direction. Hold/Flo incorporates two of the manufacturer's products with heavy-load-handling histories: Powerail and Palletflo. Those two conveyors are arranged in parallel runs and are selectively activated by manual or automatic control to operate the Hold/Flo in the desired mode. The system is constructed of standard 10-ft components which can be coupled to produce the desired path length. Transfers, turntables and other devices are available to permit building complicated path systems. *Kornylak Corp.*

Side transfer trailer (RA-5)

The complete driver-operated Railtainer side transfer trailer can handle 20-, 30-, and 40-ft ISO standard containers, or others specially sized. It transfers from flat cars to flat-bed road trailers, storage racks, or any flat platform or dock by push or pull from corner castings. It has a rated capacity of 45,000 lb and has self-powered hydraulics for transfer functions, standard king pin for use with any road tractor. *Steadman Industries.*

Landing gear (RA-6)

The "Champion" is a new extra-heavy-duty landing gear designed especially to meet rougher-than-normal usage in piggyback, container, bulk transport and heavy-duty trucking service. The gear has oversize components where the greatest stress is. Lifting capacity at 100-ft-lb. is 50,000 lb. Ultimate load capacity is 180,000 lb; side load capacity is 28,000 lb. High gear speed is 3.6 turns per inch; low gear speed, 27.5 turns per inch. *Binkley Co., Transportation Division.*

Shrink tunnel (RA-7)

Pallet-Pak Tunnels are new economy pallet shrink wrapping tunnels designed for small shippers. The tunnels, called Model 7706 compact series, cost thousands of dollars less than standard models and are shipped fully erected, thus minimizing installation costs.

Many feeding methods can be used in conjunction with the 7706 shrink tunnel, including low-cost manual transport dollies or automatic powered shuttles. The tunnels are 7 ft. 2 inches wide, 7 ft. 10 inches long and 8 ft. 8 inches high. *Weldotron Corp.*

Graphics terminal (RA-8)

A new model 8190 graphics terminal generates and displays graphics, alphanumeric characters and symbols from digital input data. It contains a digital to analog interface as well as the analog circuits and function generators necessary to display data generated by a general purpose computer. The basic terminal contains a CRT graphic monitor and position, vector, and character generators, packaged in a desk type console. The CRT is 21 in., rectangular, with 12 in. x 12 in. display area. Writing time per character is 10 microseconds. Graphics writing speed is 200,000 inches per second. *Monitor Displays.*

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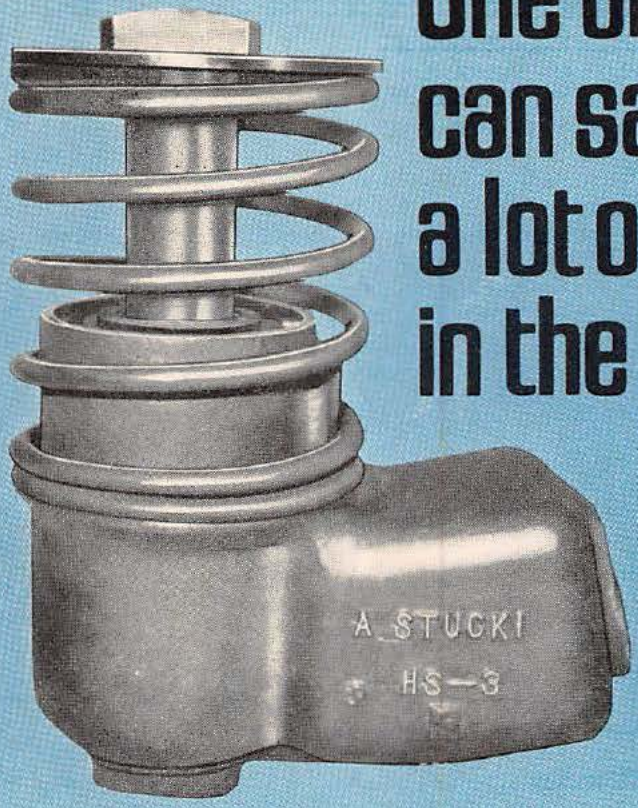

STUCKI HS-3
Hydraulic
Ride Stabilizer

STUCKI HS-6
Hydraulic
Ride Stabilizer

HS-3

HS-6

Vertical bounce at 40 to 60 mph causes serious damage to freight cars and their lading. Stucki hydraulic devices reduce vertical reactions within the car body, in addition to controlling lateral rock. There are two Stucki units:

STUCKI HS-3 HYDRAULIC RIDE STABILIZER, designed for installation in new car trucks, and

STUCKI HS-6 HYDRAULIC RIDE STABILIZER, for installation on both existing and new cars.

Both are easy to install, and they are built for long, trouble-free service on all types of 70 and 100-ton freight cars.

Plan now to cut your damage losses during the next decade: Stucki hydraulic ride control will help you do it. Let us tell you how!

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Circle 32 on coupon page 91

LETTERS

ASTRO

Washington

To the Editor:

Your special features on ASTRO in the Nov. 30 edition of Railway Age gave the program a real boost where we need it most right now—with rail employees and the thousands of other people whose fortunes are tied directly to the nation's railroads.

As you so effectively emphasized, these are the people who must do most of the work in putting ASTRO through the Congress. The industry has the potential for success only if we can get these people to realize their own futures are at stake, and they have a real role to play in protecting their own interests.

As a result of your articles, there are now fewer people sitting on the sidelines. And we can discern a noticeable spurt in the efforts of those who had already joined the fray.

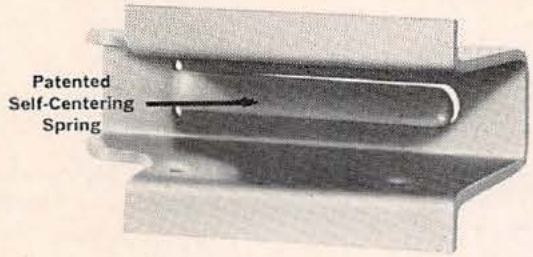
It's going to be a long, hard road but the journey is going to be a lot easier as a result of your helping hand.

Again, my sincere thanks for your support.

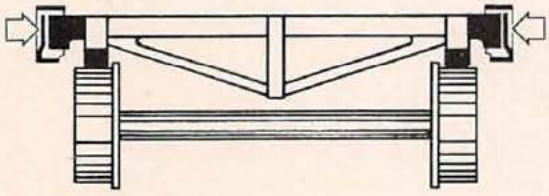
George A. Smathers
General Counsel
ASTRO

[*ASTRO reprints are available, in single copies or in bulk. Address inquiries to R. G. Lewis, Publisher, Railway Age, 350 Broadway, New York, N.Y. 10013.—Ed.*]

REDUCE WHEEL FLANGE WEAR



Buffalo — Unit Wear Plates will reduce wheel flange wear for just pennies per wheel.



Self-Centering Spring centers brake shoe on tread of wheel. Only Buffalo Self-Centering Wear Plate UW 133 gives you this unique advantage.

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Circle 33 on coupon page 91

Washington

To the Editor:

Thank you for your special ASTRO issue. Senate Bills 4463 and 4464 . . . would provide for a national freight car corporation, and insurance on loans to purchase rail freight cars, as you may know. I am generally inclined to favor the bills and if they are not substantially altered by the time they reach the floor of the Senate, I expect to be able to vote for them.

I am not on the Commerce Committee, so I will be unable to have a direct influence over this legislation before it reaches the floor. Once it is reported out of Committee, however, you can count on me to do what I can to press for action.

Gordon Allott
United States Senator
(Colorado)

Washington

To the Editor:

. . . I am going to read your ASTRO issue carefully and with interest because of the importance of the subject matter involved. You may be sure that I will keep it in mind as a part of my own consideration of any matters later coming before the Senate which relate to transportation problems and issues.

B. Everett Jordan
United States Senator
(North Carolina)

Washington

To the Editor:

. . . I can assure you that [the ASTRO issue] will be studied carefully and I am sure that it will be of help to me as a member of the House Committee on Interstate and Foreign Commerce.

James Harvey
Member of Congress
(Michigan)

Chicago

To the Editor:

As an area coordinator responsible for bringing the ASTRO story to the public in the states of Illinois and Mississippi, I am grateful for the excellent reporting job on ASTRO made by Railway Age (Nov. 30). We who are involved in the grass roots program of seeking to reach the broad public have needed a good digest of this vital subject. The interview with George Smathers brings the significance of ASTRO into sharp focus. You have performed a genuine service to the railroad industry and indeed to the American people, whose reliance upon railroading as a day-to-day part of their life is far greater than most of the public realizes.

Clifford G. Massoth
Director of Public Relations and Advertising
Illinois Central

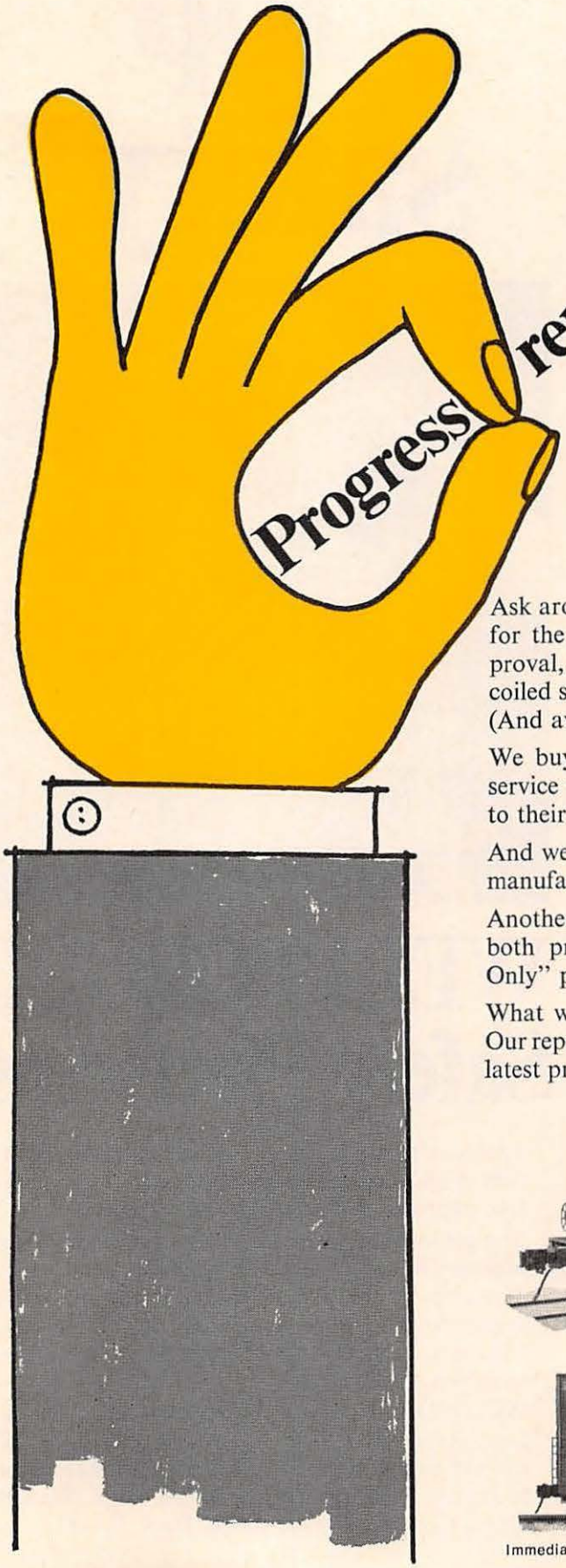
L&N close-up

Louisville, Ky.

To the Editor:

Your article on the L&N (RA, Dec. 28, p. 36) was superb. I think this profile is reporting at its highest level. We are indeed complimented.

William H. Kendall
President
Louisville & Nashville



report from US

Ask around. You'll find that our customers give us an A-OK for the way we think, and work and deliver. We earn approval, too, for a lot of bright ideas, like split leasing. And coiled steel and insulated box cars that are the best available. (And available immediately, too!)

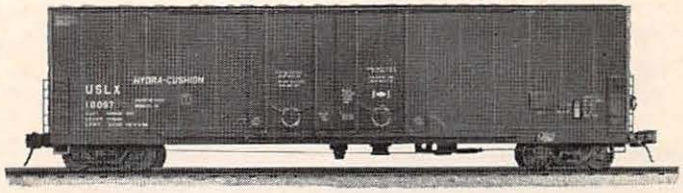
We buy, rebuild, lease back, too. That's when we buy up service worn cars, rebuild or upgrade them, lease them back to their former owners.

And we lease any type of rolling stock, of our own or other manufacture.

Another thing we're good at is freight car maintenance for both private owners and railroads. (The "Finance Lease Only" people want no part of this!)

What we're doing so well is likely to be important to you. Our representative will give you facts and figures. Ask for our latest progress report. There's always something new with US.

Coiled steel cars having lift-off covers, with and without insulation and heating systems, available.



Immediately available: More than five hundred 50'-6" and 52'-5" insulated box cars

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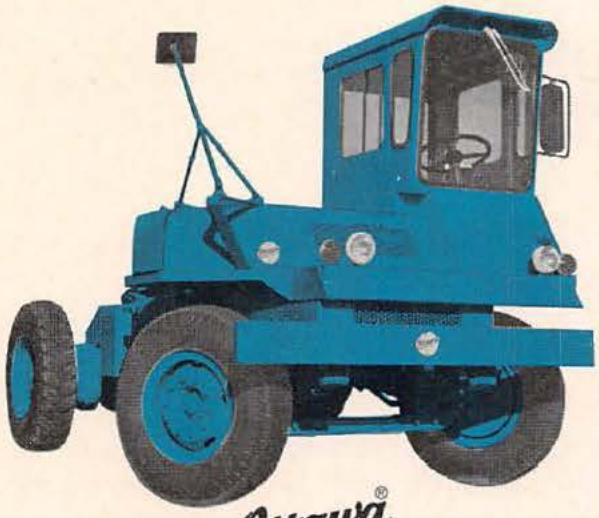

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Years of on-the-job use and testing, have proven that one model of a yard tractor or a converted highway tractor doesn't successfully compete with the efficiency and economy of an Ottawa Commando totally engineered and built to handle a specific job.

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Available in six models, each Ottawa Commando Yard Tractor is engineered and built to handle a specific job faster, more economically and efficiently than any other type of yard hustler.

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Ottawa Commando Yard Tractors, built by the 'first' company in the field, have been tried and proven with more units in service than any other make. Features such as rugged frame construction with extra width for stability, job-matched power trains, dependable hydraulic 5th wheel and air brake systems, operating ease and visibility add profit — not losses — to your operation.

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Backed in the field by experienced, highly competent Daybrook-Ottawa parts and service distributors, you are assured of the most convenience and immediate availability in servicing your units.

ONE OF OUR 6 MODELS IS ENGINEERED TO HANDLE YOUR NEEDS! CALL OR WRITE FOR YOUR NEAREST OTTAWA COMMANDO DISTRIBUTOR!

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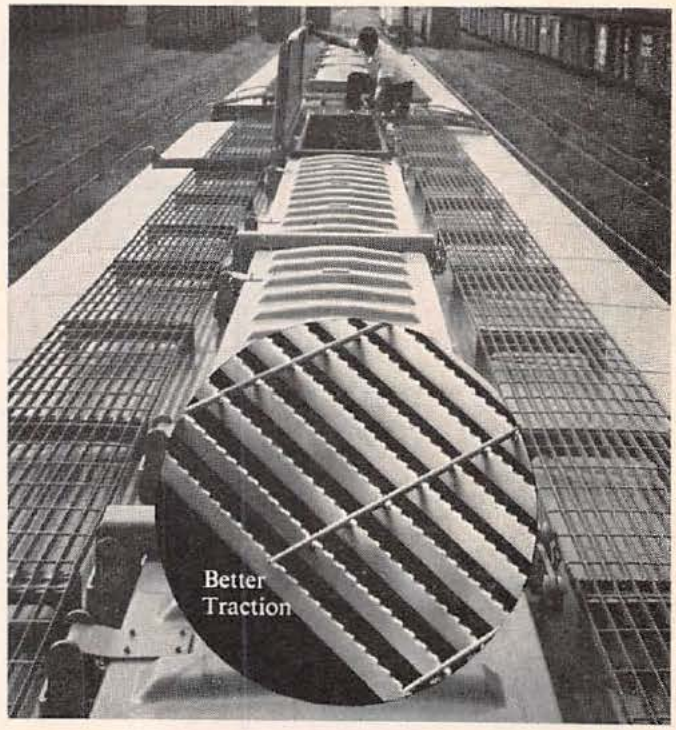


WELDFORGED Safety Platforms

Thousands of tooth-like projections assure traction in all weather. Positive-grip, self-clearing surface improves personnel efficiency and safety.

You get longer life and less maintenance than with ordinary running boards. WELDFORGED Safety Platforms feature integral fusion of transverse and longitudinal bars for heavy-duty, one-piece construction. Easily withstands the rigors of weight, vibration, and weather.

WELDFORGED Safety Platforms are available for all types of applications on end, side, or top of car. Get details today including suggestions on how to reduce installation costs. Write 101 S. Wacker Drive, Chicago, Illinois 60606, Dept. RA-11.

UNITED STATES GYPSUM
TRANSPORTATION PRODUCTS DIVISION

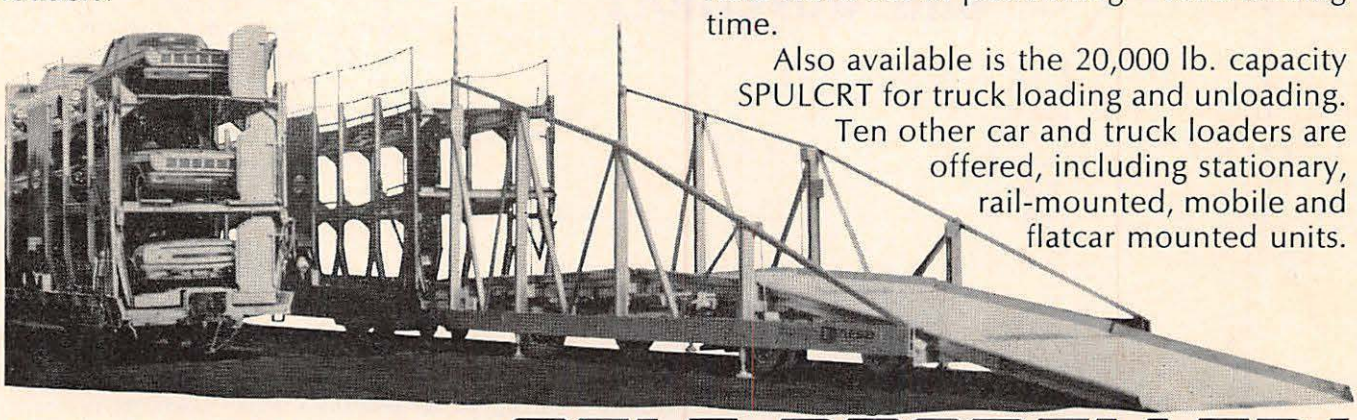
Circle 36 on coupon page 91

Buck self-propelled car and truck loaders slash loading time.

The Buck self-propelled SPULCR automobile loader goes anywhere in the yard under its own power. This means that railway cars can be loaded where they stand — don't require moving to loader tracks or fixed position loaders.

Mounted on pneumatic tires and driven by a gasoline engine, the Buck 8,000 lb. capacity SPULCR loads and unloads at the front or rear of tri-level rail cars. Power steering and hydraulic ramp operation take the hard work out of positioning – save loading time.

Also available is the 20,000 lb. capacity SPULCRT for truck loading and unloading. Ten other car and truck loaders are offered, including stationary, rail-mounted, mobile and flatcar mounted units.

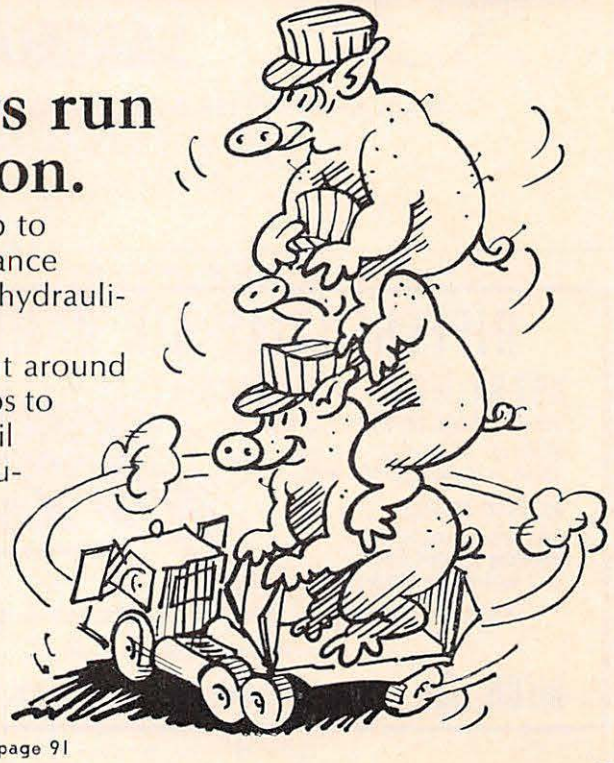


They're SELF PROPELLED!

Buck Piggyback Loaders run circles around competition.

Buck's PB3 piggyback loader handles all trailers up to 100,000 lbs. gross, including the 10" ground clearance super cargo trailers. PB3 ramp lifting cylinders are hydraulically powered for reliable performance.

Heavy-duty rubber tired wheels allow movement around yard or over highway. Five standard piggyback ramps to 100,000 lbs. capacity. Fixed loading ramps, lateral rail ramps for servicing several tracks, and portable pneumatic tire ramps included. Write for free literature.



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Circle 37 on coupon page 91

1970 REVIEW

(Continued from page 81)

timetable for DOT action. Within six months of enactment, the Secretary must (1) establish Federal facilities and staff to evaluate the hazards connected with shipment of various materials; (2) set up a central reporting system for accidents involving hazardous materials; and (3) review all aspects of hazardous-materials transportation, leading up to recommendation of appropriate steps which "can be taken immediately to provide greater control over the safe movement of such materials."

Other action at the Federal level involved:

—Promotion of improved urban mass transportation systems. The 1970 act authorizes $3.1 billion to finance projects of the Urban Mass Transportation Administration beginning in fiscal-year 1971 and continuing through mid-1976. It states a Federal intent to provide $10 billion for urban mass transportation over the next 12 years.

—Promotion of research in high-speed ground transportation, with $21.7 million authorized for the fiscal year ending June 30, 1971. This program, based largely on the Northeast Corridor, includes the Metroliner and TurboTrain demonstration projects; it also includes research on a tracked air-cushion vehicle, on linear induction systems, on tube-and-tunnel technology, as well as on more conventional rail-based projects.

—Passage, shortly before adjournment, of legislation providing up to $125 million in loan guarantees to railroads undergoing reorganization under bankruptcy laws. At yearend, four roads (Penn Central, Lehigh Valley, Boston & Maine and Central of New Jersey) met the "reorganization" qualification. The expectation was that PC would file application for guarantee of loans of $110 million.

● **Still coming.**—Meanwhile, Congress stalled on the tax-discrimination bill, which got through the Senate but only as far as the committee-approval stage in the House. And time permitted little more than preliminary work on the two freight-car bills which Sen. Magnuson, as principal sponsor, described as "working papers." The first of these bills was aimed at creation of a non-profit, quasi-government corporation to acquire and maintain a fleet of general-purpose freight cars. Working capital would be provided initially through a per-diem surcharge on plain box cars; and, while the corporation would begin operations with acquisition of this type of equipment, there was provision for it later to set up a broader pool of general-service equipment. The second freight-car bill was designed to create a Federal Railroad Equipment Obligation Insurance Fund to guarantee loans made to railroads (or car-providing subsidiaries) for the financing of new or rebuilt freight cars and locomotives. The bill provided for insurance of up to $3 billion in obligations at any one time.

In still another development at the Federal level, there was continuing advocacy of combining the Interstate Commerce Committee, Civil Aeronautics Board and Federal Maritime Commission into a single regulatory agency but there was no indication that the President would soon propose this to Congress. The AAR has been a supporter of the single-agency concept—but late last year it charged that its position had been "misinterpreted in some quarters as lending support to 'unjustified criticism' of the ICC." AAR emphasized that the industry, "while often a severe critic of the ICC, believes fully in the integrity and devotion to duty of the members of the Commission . . . What is needed to achieve for the public the most economical and efficient national transportation system is a revision of the outmoded and discriminatory policies and laws governing transportation rather then continued attacks on dedicated public servants." ■

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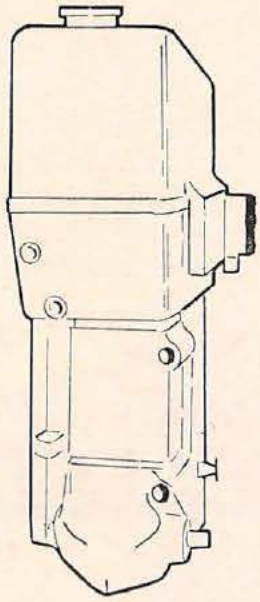

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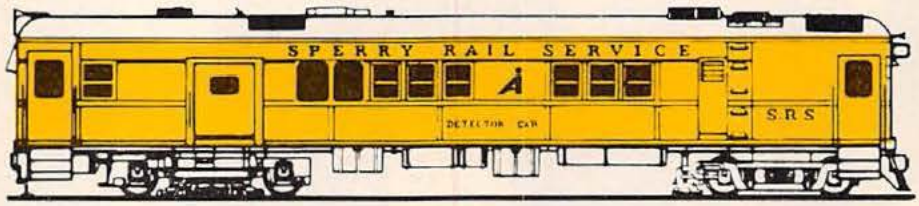

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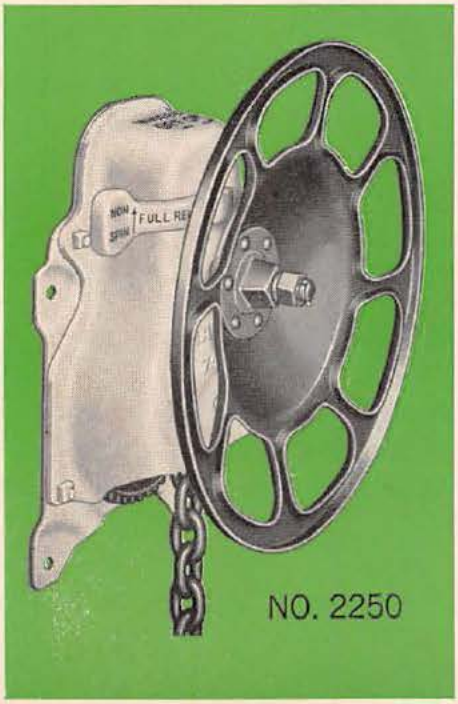

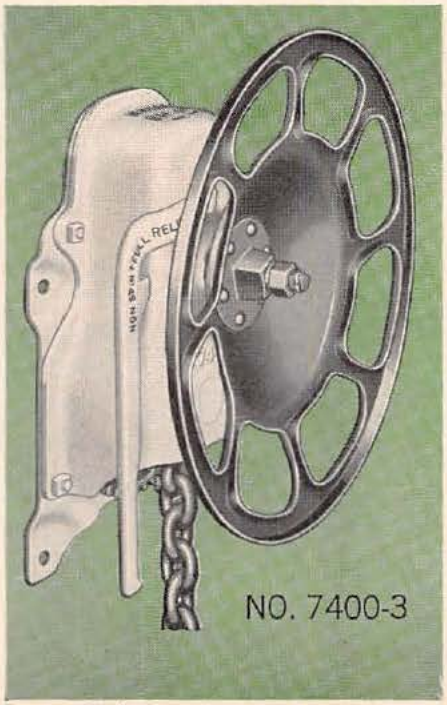

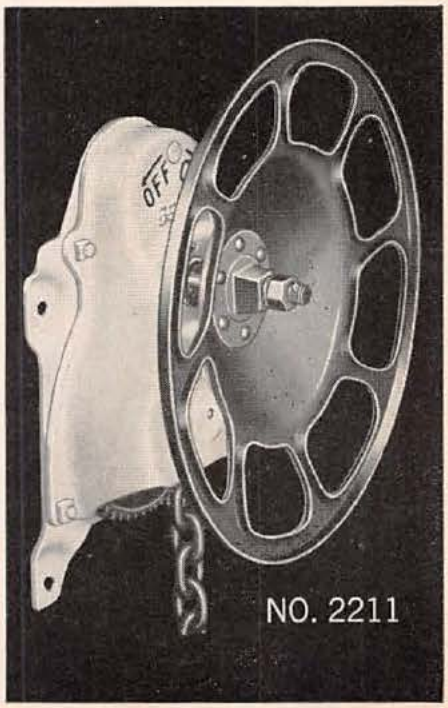

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Market Outlook

CARLOADINGS

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Nonmetallic minerals	8,411	6,726
Grain mill products	18,587	15,332
Food & kindred products	23,881	20,619
Primary forest products	21,277	16,376
Lumber & wood products (except furniture)	11,097	9,626
Pulp, paper & allied products	20,655	16,716
Chemicals & allied products	24,902	22,718
Petroleum products	9,970	9,156
Stone, clay & glass products	14,226	13,381
Coke	8,470	7,442
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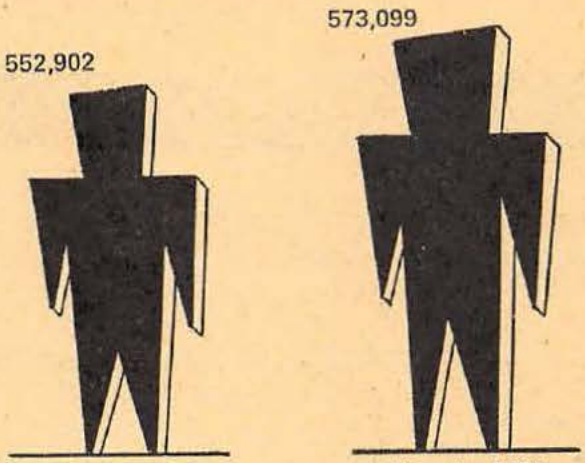
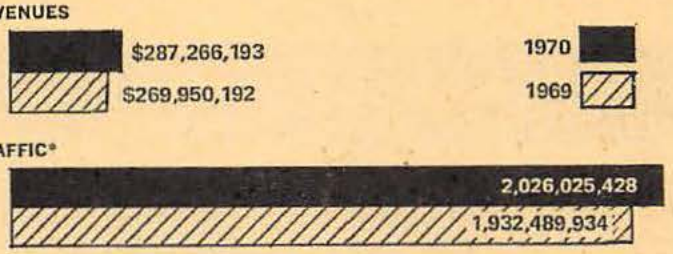
RAILROAD EMPLOYMENT
(CLASS I LINE-HAUL RAILROADS)



Source: Bureau of Accounts, ICC.

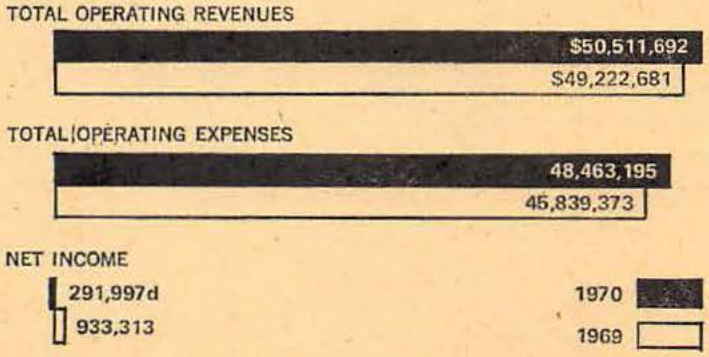
TRANSPORTATION REVENUE AND TRAFFIC OF OIL PIPE LINE COMPANIES
(FIRST QUARTER 1970 AND 1969)



*Barrels of oil originated on line and received from connections.

Source: Bureau of Accounts, ICC. Compiled from reports of 92 pipe line companies having individual operating revenues exceeding $500,000.

FREIGHT FORWARDERS—SELECTED STATISTICS
(FIRST QUARTER 1970 AND 1969)



Source: Bureau of Accounts, ICC. Compiled from 65 quarterly reports of forwarders with annual gross revenues of $100,000 or more.

Viewpoint

"A stern prospect, warranting no soft optimism"

Late in 1970, trustees of the Penn Central told Congress:

"The . . . critical question is whether there is any reasonable prospect of turning the Penn Central around, for making it an effective and self-supporting operation, if the needs of the immediate future are met.

"There is that reasonable prospect.

"It is a stern prospect, warranting no soft optimism and offering no certainty."

Early in 1971, much the same statement could apply to the railroad industry as a whole. There is a reasonable prospect that railroads can accomplish, as tax-paying corporate citizens, the task that Transportation Secretary John A. Volpe envisions for them by the end of the decade: producing up to 1.3 trillion ton-miles of freight service for an economy in which they must continue to be, declares Volpe, the prime movers.

But it is a prospect that requires reasonable approaches on the part of the railroads themselves; on the part of their labor organizations; on the part of their customers; and on the part of government at all levels—"reasonable" being defined as "not extreme or excessive . . . possessing sound judgment."

If they want to be treated as an industry vital to the economic security of the nation, railroads must begin to act as one—not as 70-odd localized industries fighting for strategic advantage.

The labor organizations must find a more workable rhetoric than that built around such scare words as "nationalization"—and suit action to the words so magnificently uttered when they joined with management in mid-1970 in supporting ASTRO's "road-back" program.

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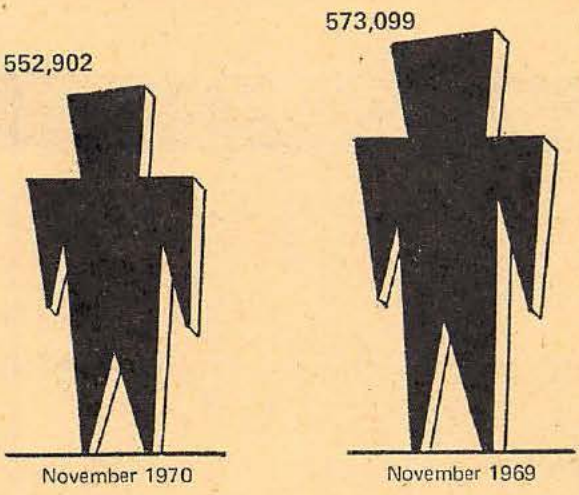

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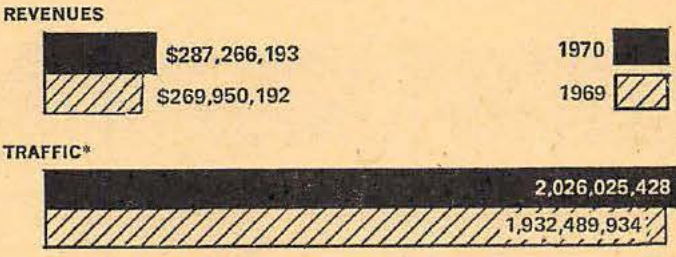

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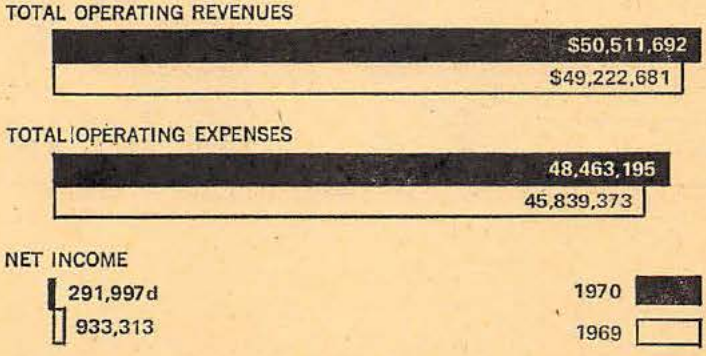

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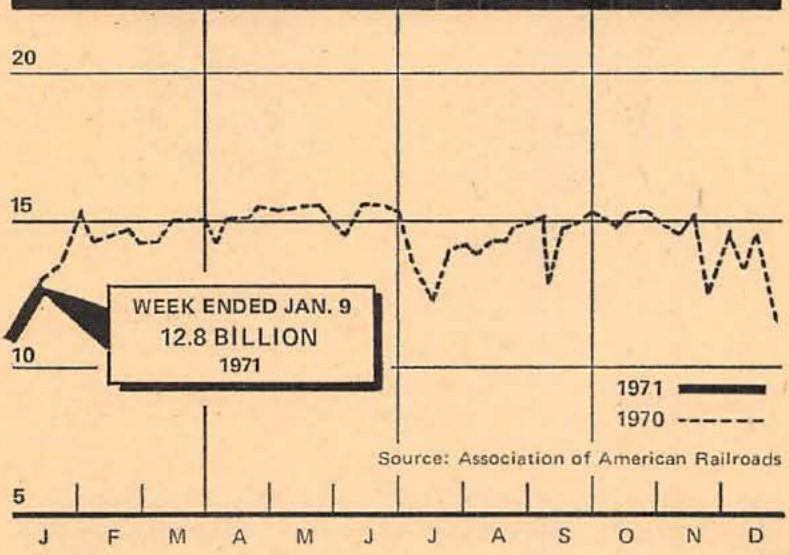
RAIL FREIGHT TRAFFIC TRENDS

BILLION TON-MILES (Estimated)



NEW ORDERS FOR MACHINE TOOLS*

	November 1970 ($000)	November 1969 ($000)	11 mos. 1970 ($000)	11 mos. 1969 ($000)
Metal cutting tools	30,150	78,950	612,750	1,112,500
Metal forming tools	11,500	31,900	233,150	507,200

MACHINE TOOL SHIPMENTS*

	November 1970 ($000)	November 1969 ($000)	11 mos. 1970 ($000)	11 mos. 1969 ($000)
Metal cutting tools	56,750	92,200	908,250	1,074,300
Metal forming tools	35,500	39,200	414,600	371,500

*Including foreign and domestic.
Source: National Machine Tool Builders' Association.

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FREIGHT-TRAIN CARS

● *Burlington Northern.*—Ordered 400 4,050-cu-ft-capacity mechanical refrigerator cars from Pacific Car & Foundry at a cost of approximately $12 million. Cars will be built for Western Fruit Express, wholly-owned BN subsidiary. Deliveries are scheduled to begin in April. BN also ordered 50 30-ft cabooses from International Car, 47 for BN and three for Fort Worth & Denver, with deliveries to begin in second quarter 1971.

● *Canadian Pacific.*—Placed an $8.5-million order with National Steel Car Corp. for 600 steel bulkhead flatcars. The 70-ton, 56-ft, 5-in. cars will incorporate both end bulkheads and chain tie-downs. Delivery will begin in March. The cars will be assigned to service between Canada and the U.S. and will carry primarily lumber and plywood products.

● *Trailer Train.*—Ordered 17 89-ft, 4-in. standard-level cars from Bethlehem. As of Jan. 6, TTX had 58,658 cars in service or on order.

● *Serviceable cars.*—Revenue freight cars in serviceable condition owned by Class I railroads on Dec. 1, 1970, totaled 1,342,672, compared with 1,360,795 on Dec. 1, 1969, according to most recent AAR Car Service Division report. Estimated total ownership of all railroad- and privately-owned freight cars on Dec. 1 (see table below) was 1,781,316 (average capacity: 66.89 tons), compared with 1,788,981 (average capacity: 65.53 tons), on Dec. 1, 1969.

ESTIMATED OWNERSHIP—ALL REVENUE FREIGHT CARS
(Dec. 1, 1970 vs. Dec. 1, 1969)

		Box	Covered Hopper	Gondola	Hopper	Flat	Refg.	All Other	TOTAL
Class I	1970	537,972	130,923	188,070	388,580	74,504	53,639	50,738	1,424,426
	1969	546,522	125,548	192,863	395,664	71,388	54,692	53,521	1,440,198
RRO&C Refgs.*	1970	0	0	0	0	0	45,753	0	45,753
	1969	0	0	0	0	0	45,724	0	45,724
All Other Private	1970	1,279	37,634	2,698	2,641	52,075	16,528	173,703	286,558
	1969	1,064	33,579	2,062	2,749	48,554	14,639	176,444	279,091
Class II & S&T Cos. †	1970	9,538	758	4,318	7,017	532	1,455	961	24,579
	1969	8,570	706	4,290	7,314	542	1,459	1,087	23,968
GRAND TOTAL	1970	548,789	169,315	195,086	398,238	127,111	117,375	225,402	1,781,316
	1969	556,156	159,833	199,215	405,727	120,484	116,514	231,052	1,788,981

*Railroad owned and controlled refrigerator car lines.
†Class II railroads and switching and terminal companies.

PASSENGER-TRAIN CARS

● *New York/Connecticut.*—Canadian Vickers, Ltd., Montreal, has announced receipt of a $7-million contract from General Electric for 144 stainless steel passenger-car bodies. GE is supplying the States of New York and Connecticut for service on Penn Central's New Haven Division. These states recently assumed responsibility for operation of New Haven commuter service.

Viewpoint

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RAILROAD COMMUNICATIONS INSTALLED IN 1970

(continued from page 88)

Railroad	Radio Units	Intercommunications: No. of Systems	Intercommunications: Loudspeakers & Telephones	Channelizing Equipment: Carrier Units Terms. & Rep.	Channelizing Equipment: Data Modems	Telephone: Exchanges	Telephone: Stations Available	Computer I/O unit	ACI Scanners	Microwave Stations
Milwaukee Road	31	—	—	—	—	—	—	35	—	—
MP	62	5	45	154	—	1	—	—	—	2
C&EI	21	—	—	—	—	—	—	—	—	—
T&P	40	4	60	81	—	—	—	—	—	1
Monon	13	—	—	—	7	—	—	7	—	—
Montreal UCT	11	10	401	—	—	—	—	—	—	—
NYCTA	2,215	3	2,400	400	—	—	—	—	—	—
N&W	39	2	55	6	4	—	1	4	1	—
NS	13	—	—	—	—	—	114	—	—	—
Ont. North	8	1	6	152	2	1	38	26	—	—
PC	—	1	99	—	19	2	60	—	—	—
PATH	235	—	—	—	—	—	—	—	—	—
PGE	47	1	2	60	—	1	150	1	—	7
Reading	30	—	—	4	—	—	12	—	—	—
RF&P	28	1	6	—	—	—	—	—	—	—
Rock Island	117	5	110	8	—	—	—	1	—	—
Santa Fe	132	—	—	—	—	2	—	—	—	—
SCL	661	8	73	14	—	1	—	2	1	—
Soo Line	18	—	—	8	—	—	—	—	—	—
Southern	478	—	—	67	38	—	50	—	3	—
SP	331	—	2	750	80	1	75	10	2	54
TTC	4	2	24	—	—	—	—	—	—	—
UP	186	—	36	81	230	1	215	215	1	30
WP	69	—	—	53	—	—	—	—	—	6
Totals	7,643	113	4,548	4,422	859	331	2,280	3,563	33	337

RAILROAD SIGNALING INSTALLED IN 1970

Railroad	Highway Grade Crossings Protected by: Flashing-light signals	Highway Grade Crossings Protected by: Flashing-light signals & gates	Block Signals & Traffic Control: Road Miles	Switches	Electric Locks	Signals	Train Stops Cab Signals	Safety Detectors	Miscellaneous Signal Units
Alaska	5	—	—	—	—	—	—	—	—
A&WP	—	—	—	—	—	—	—	4	—
BAR	5	—	—	—	—	—	—	—	—
B&LE	3	1	—	—	—	—	—	2	15
B&M	1	—	—	—	—	—	—	—	3
BN	32	23	131	39	53	182	—	30	15
CN	256	20	176	117	57	355	—	17	353
CP Rail	106	13	—	—	—	—	—	2	132
C&O	30	10	—	—	—	—	—	—	51
B&O	20	8	64	13	4	57	—	22	41
C&NW	38	11	—	—	—	—	—	5	8
C&WI	—	1	—	—	—	—	—	—	6
CTA	—	—	5	—	—	—	214 CS	—	—
CTS	—	—	—	—	—	—	10 CS	—	17
Clinchfield	1	—	—	1	5	4	—	—	—
D&H	7	—	—	—	4	—	—	3	6
D&RGW	5	1	6	4	17	20	—	18	5
DT&I	3	—	—	—	—	—	—	1	8
DM&IR	1	—	10	—	—	4	—	1	35
EJ&E	1	1	—	—	—	—	—	—	—
EL	5	12	—	—	—	—	—	—	18
FEC	6	5	14	5	40	18	—	24	—
Frisco	18	4	—	—	—	—	—	8	19
GB&W	3	—	—	—	—	—	—	—	—
GM&O	11	2	22	3	19	18	—	2	5
IC	32	11	34	4	10	18	—	28	8
LV	3	2	19	—	—	10	—	—	20
LI	—	18	32	—	3	9	470 CS	—	9
L&N	25	3	—	—	—	—	—	3	—
MeC	4	—	—	—	—	—	—	—	6
Milwaukee Road	32	11	—	—	—	—	—	—	1
MP	25	5	3	—	—	4	—	—	9
C&EI	2	2	—	—	—	—	—	—	3
T&P	7	4	2	—	—	2	—	—	—
Monon	7	—	—	—	—	—	—	—	—
NYCTA	—	—	—	—	—	110	27 TS	—	225
NS	3	—	—	—	—	—	—	—	—
N&W	34	7	101	6	12	71	—	4	58
ONL	2	—	—	—	—	—	—	8	—
PC	25	55	69	26	33	93	—	12	160
PATH	—	—	—	—	—	—	—	—	32
PGE	6	—	—	—	—	—	—	—	—
Reading	2	2	—	—	—	—	—	—	29
RF&P	—	—	—	—	—	—	—	2	12
Rock Island	32	12	—	—	—	—	—	—	2
Santa Fe	34	49	174	—	—	—	—	5	—
SCL	25	17	42	31	20	64	—	38	31
Soo Line	37	—	48	8	5	41	—	—	—
Southern	35	15	9	5	1	7	—	7	31
SP	59	210	—	—	—	—	—	2	50
TRRAStL	—	1	—	—	—	—	—	—	26
Union	—	—	—	—	—	—	—	—	55
UP	18	13	9	12	2	44	25 CS	4	—
WP	2	22	—	—	—	—	—	1	—
SN	1	1	—	—	—	—	—	—	—
Totals	1,009	572	970	274	285	1,131	746	252	1,504

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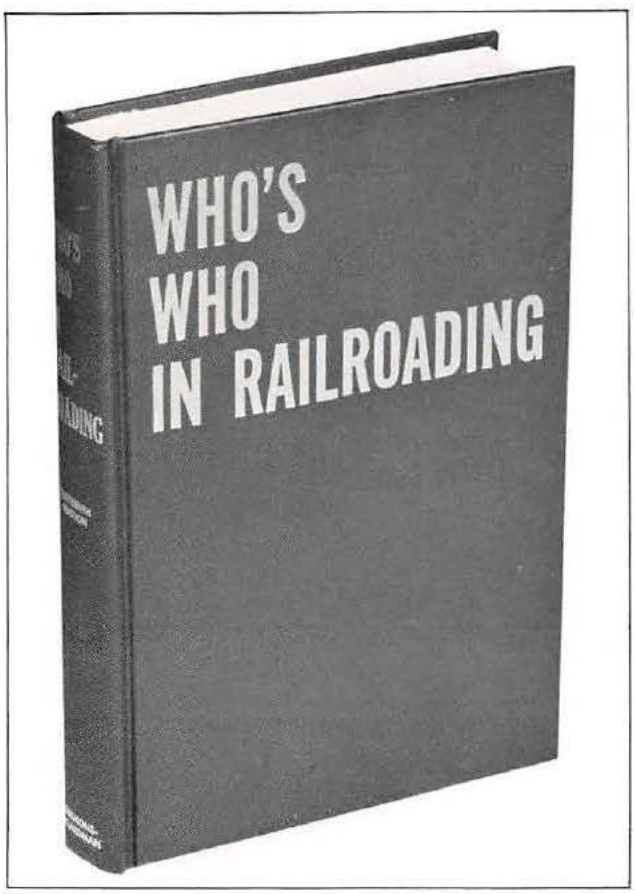

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LUBRICATION ENGINEERING NEWS

Cities Service research and development program constantly producing new, improved diesel engine lubes

Cities Service Oil Company maintains an aggressive and continuing research and development program at the company's Princeton, New Jersey lubrication research laboratories. Improved products for railroad applications, both on track and off, are under constant development and testing. Within the past two years alone, superior lubricants have been introduced for a number of different applications. In many cases, these advanced railroad lubes

have taken the place of two or more previous products and thus served to shorten the list of "required" lubricants in customers' inventories. For information on specific products now under development and available for test application programs, drop a line to L. M. Fleming, Transportation, Sales Department, Cities Service Oil Company, Box 300, Tulsa, Oklahoma 74102.

New CITGO RD-836 diesel engine oil extends service life of high horsepower locomotives

The promise of pulling more tonnage with fewer units and a resultant decrease in maintenance costs has remained little more than a promise in many cases. Higher horsepower diesel engines place greater demands on the crankcase oil and on those moving parts whose life depends on effective lubrication. Conventional high dispersant diesel lube oils just couldn't handle the load. Something better had to be developed.

That something better turned out to be CITGO RD-836, specifically formulated to get the maximum usage from each new high horsepower engine. RD-836 withstands more heat for longer periods; neutralizes greater amounts of acid; keeps oil filters and engine surfaces cleaner. Wear is reduced and oil life is significantly extended, resulting in less downtime and lower maintenance costs. Ten major railroads are now using CITGO RD-836. In case after case, examination of pistons, rings and cylinders following thousands of hours of operation shows virtually no wear.

Outstanding reserve alkilinity and stability

Among the properties which enhance the performance capabilities of CITGO RD-836 diesel engine oil include excellent reserve alkilinity for extended TBN retention, very fine compatibility with other approved diesel engine oils and unusual stability, which helps eliminate clutch slippage.

In addition to these qualities, RD-836 also possesses exceptional anti-rust and anti-foam properties provided by special components in the additive package. The superior grade Medium VI base stocks contribute exceptional oxidation stability and anti-wear protection along with good silver lubricity.

Dispersant detergent keeps engine parts clean, filters free-flowing.

An ashless, highly dispersant detergent is one of the key ingredients in CITGO RD-836 diesel engine oil. Designed to provide both longer service intervals and extended filter life, its high despersancy permits the

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